

When you see the red flag Here's What To Do:

FIRE WEATHER

Firefighters will raise red flags at fire stations in Alameda and Contra Costa Counties to warn residents of extreme fire weather, as warnings are issued by the National Weather Service. These Red Flags, created by the Diablo Fire Safe Council, are part of the effort to make homes and communities safer from wildland fire.

Lack of rain, dry vegetation, low humidity, and strong winds make fire seasons especially severe. Several days a year, typically during the Fall, these factors combine, making it easier for fires to start and more difficult to put out.

Richmond Fire Department
Prevention Services Division
WVPHS2-100 (07/19)

NOTICE OF DEFENSIBLE SPACE INSPECTION

A fire department representative has inspected your property for fire hazards. You are hereby notified to correct the violation(s) indicated below. Failure to correct these violations may result in a citation and fine.

Date: _____

Captain/Inspector	Inspection Address/APN:	Contact Number:	Contact Email address:
Employee #:			

30 of all structures or to the property line (Refer to illustration below):

- all branches within 10 feet of any chimney or stovepipe outlet, pursuant to PRC § 4291 (a) (4) and 34 CCR § 1299.03 (a)(2);
- leaves, needles or other vegetation on roofs, gutters, decks, porches, stairways, etc. pursuant to PRC § 4291 (a)(6) and 34 CCR § 1299.03 (a)(3);
- all dead and dying trees, branches and shrubs or other plants adjacent to or overhanging buildings, pursuant to PRC § 4291 (a)(5) and 34 CCR § 1299.03 (a)(2).



IMPORTANT All violations shall be cleared within 30 days of the inspection date. A re-inspection of the property will occur after the 30-day compliance timeframe.

KNOW THE LAW BE FIRE SMART

100 FEET OF DEFENSIBLE SPACE IS REQUIRED UNDER THE PUBLIC RESOURCES CODE (PRC) § 4291. CALIFORNIA BUILDING CODE CHAPTER 7A REQUIRES CERTAIN CONSTRUCTION MATERIALS AND METHODS FOR HOMES IN WILDLAND AREAS. BE SURE TO CONTACT YOUR LOCAL FIRE DEPARTMENT FOR ADDITIONAL REQUIREMENTS TO ENSURE YOUR HOME IS COMPLIANT WITH THE LAW. READYFORWILDFIRE.ORG/THELAW

Richmond CWPP

Community Wildfire Protection Plan

An Appendix to the Contra Costa Countywide Community Wildfire Protection Plan (CWPP)

Contra Costa County

Adopted by City Council Resolution No. 1-20 January 14, 2020

Prepared by
Richmond Fire Department

In conjunction with the
Diablo Fire Safe Council
Stakeholder Committee Members



Table of Contents

Executive Summary

Introduction

Scope and Purpose

Section 1: City of Richmond Information

1.1 City Overview

1.2 The Planning Process & Stakeholders

1.3 Integration with Other Plans and Initiatives

Section 2: Fire Hazard and Risk in the Wildland Urban Interface

2.1 Wildfire Environment

2.2 Wildland Urban Interface Risk and Hazard Assessments

2.2.1 Potential for Wildfire to Occur

2.2.2. What to Protect - Values at Risk within the WUI

2.2.3 Protection Capabilities

2.3 Strategies for Reducing Risk within the WUI

Section 3: Recommended Action Plan

3.1 Selection of Recommended Priorities

3.2 Information, Education and Collaborative Planning Priorities

3.3 Enhanced Suppression Capability and Emergency Preparedness Priorities

Section 4: Prioritizing Fuel Reduction Treatments

4.1 Hazardous Fuels Management

4.2 Fuels Reduction Treatments – Geographically Based Projects

4.3 Fuel Reduction Treatments – Related Priorities

4.4 Environmental Review and Permitting

Section 5: Prioritizing Treatment of Structure Ignitability

5.1 Structure Ignitability

5.2 Key Ignition Resistance Factors

5.3 Improving the Survivability of Structures within the WUI

5.4 “Home Hardening” - Retrofitting an Existing Structure for Survivability

Section 6: Sustaining the Plan

6.1 Updates of the Action Plan

6.2 Monitoring, Evaluating and Adapting - Updates of Action Plan

6.2.1 Evaluating Information, Education and Collaborative Planning

6.2.2 Evaluating Suppression Capability and Emergency Preparedness

6.2.3 Evaluating Fuel Reduction

6.2.4 Evaluating Reducing Structure Ignitability

Section 7: Signature Pages

Appendices

Appendix A: Fire Hazard Severity and WUI Area Map

Appendix B: Richmond Defensible Space Inspections

Executive Summary

The Richmond Community Wildfire Protection Plan (CWPP) provides an analysis of wildfire hazards and risk in the wildland-urban interface (WUI) of the City of Richmond and adjacent unincorporated areas such as East Richmond Heights. The Plan is an appendix to the Contra Costa Countywide Community Wildfire Protection Plan (CWPP) and follows the standards for CWPPs established by the federal Healthy Forest Restoration Act, including:

1. Identifying and prioritizing fuel reduction opportunities.
See Section 2: Fire Hazard and Risk in the Wildland Urban Interface and Section 4: Prioritizing Fuel Reduction Vegetation Management Treatments.
2. Addressing structure ignitability.
See Section 5: Prioritized Treatment of Structure Ignitability.
3. Collaborating with stakeholders.
See Section 1.2: The Planning Process and Stakeholders.

Based on analysis, recommendations have been identified to aid stakeholders in reducing the threat of wildfire. The Plan complements local agreements and existing plans for wildfire protection for a coordinated effort in determining appropriate fire management actions.

The Contra Costa Countywide CWPP is the result of an area-wide planning effort. The Richmond CWPP looks at similar issues, but allows for a more detailed investigation and customized recommendations. The first countywide CWPP in 2009 began with compilation of existing documents, analysis of fire behavior potential (based on fuels, topography and historical weather conditions) and collaboration with homeowners, representatives of special interest groups and agency officials. In 2014 - 2015 an Updated Plan was revised through a similar area-wide planning effort that reviewed the plan, updated relevant sections and refined priority actions. The Countywide plan is being updated in 2019 with anticipated adoption by year-end. The Richmond CWPP complements countywide efforts.

The goal of the Richmond CWPP is to reduce hazard through increased information and education about wildfires, hazardous fuels reduction, actions to reduce structure ignitability and other recommendations to assist emergency preparedness and fire suppression efforts. Most important, it facilitates a coordinated effort between the various stakeholders.

Recommendations

The Richmond CWPP recommendations are organized into four categories of mitigation related to:

- Information, Education and Collaborative Planning
- Enhanced Suppression Capability and Emergency Preparedness (including evacuation preparedness)
- Fuel Reduction Treatments around Homes and on Public Lands
- Improving Structure Survivability

Priority Action overviews are provided for four priority activities.

1. Fire Prevention Education Program. Support year-round community efforts with multi-lingual education programs regarding wildfire safety and ignition prevention. These should identify inexpensive things a homeowner, contractors and others can do.
2. Evacuation Planning and Preparedness. Collaborate with agency and community partners (CERT, Neighborhood Watch, Red Cross) to assist neighborhood groups in

developing multi-lingual neighborhood evacuation plans so residents know what to do in the event of a wildfire.

3. Defensible Space Programs (Fuel reduction around homes). Expand defensible space programs for property owners in high fire hazard areas in Richmond.
4. Home Hardening. Develop education and training related to retrofit of existing homes and structures to improve their survivability (home hardening). Identify what can be done without major remodel. Evaluate new technologies, materials and products that are available for retrofit and the pros and cons.

These summaries identify implementation steps, lead and partners, timeframes and funding needs. A list is included of geographically based, priority fuel reduction projects and prevention strategies.

The Richmond CWPP is a multi-year guiding document that will facilitate the implementation of present and future mitigation efforts. It is important to note that the plan is a working document and will need to be updated every five years and after major "events" such as wildfire, flood, insect infestation, significant new home development as well as the regional update of the Contra Costa County CWPP, Multi-Hazard Mitigation Plan or General Plan Safety Elements.

Introduction

Fire records for the western portion of Contra Costa County around the City of Richmond document an active, damaging and costly fire history. There is little question that the area's unique ecology – particularly the topography, climate and vegetation – provides the setting for catastrophic fire to strike. While large-scale fires do not occur every year, fire incidents driven by extreme wind conditions have repeatedly been difficult to contain. Contemporary population growth, leading to residential development in the wildland urban interface (WUI), along with the introduction and proliferation of exotic species exacerbates this problem by putting more people, property, critical infrastructure and natural resources in harm's way. In order to reduce the risk of loss of life and property due to wildfire, the Richmond Fire Department, Diablo Fire Safe Council and project partners have worked with residents, representatives of federal, regional, state and local agencies along with community organizations to develop this Richmond focused Appendix to the Contra Costa County Community Wildfire Protection Plan.

The principles behind the development of the Richmond CWPP are not new. The planning process was guided by the 2003 Healthy Forests Restoration Act's¹ call for such plans. The National and State Fire Plans, the Federal Emergency Management Agency Disaster Mitigation Act of 2000 and several locally developed documents all mandate community based planning efforts, coordination, project identification, prioritization, funding review and multi-agency cooperation. Benefits of a CWPP include:

- The opportunity to establish a locally appropriate definition and boundary for the wildland urban interface (WUI).
- The requirement for federal agencies, when planning fuel reduction projects, to give priority to projects that provide for the protection of at-risk communities or of watersheds, or that implement recommendations in a CWPP.
- Expedited National Environmental Policy Act (NEPA) procedures for federal agencies implementing fuel reduction projects identified in a CWPP.

Since within Richmond there is only a small amount federally owned lands, the stakeholder planning group discussed what the Richmond CWPP should include and why is the plan is of value. Unique benefits of the Richmond CWPP include:

- Grant funding opportunities at the Federal and State levels.
- Improved coordination with neighboring jurisdictions and land managing agencies.
- Identification of community wildfire concerns and potential solutions.
- Background for future code updates to incorporate wildfire safety into retrofit, infill and new development within the City.

Many common challenges and shared solutions were identified during the development of the Richmond CWPP and a four selected for identification of priority actions.

Funding provided by a grant from the
California Fire Foundation.



¹ Source: HFRA, P.L 108-148.

<https://legcounsel.house.gov/Comps/Healthy%20Forests%20Restoration%20Act%20Of%202003.pdf> and "Preparing a Community Wildfire Protection Plan" <https://dnr.wi.gov/topic/forestFire/documents/cwppHandbook.pdf>

Scope

The scope of this Community Wildfire Protection Plan (CWPP) focuses on the City of Richmond and adjacent unincorporated areas under their sphere of influence. The plan does the following:

1. Describes the fire environment of the area.
2. Identifies values at risk as defined by the stakeholders.
3. Provides maps that show high fire hazard areas, as defined by federal, state and local authorities.
4. Establishes the rationale for prioritization of fuel management projects and treatment methods, as well as outlines principles for selection of projects for available funding.
5. Describes measures communities and homeowners can take to reduce the ignitability of structures.
6. Identifies sources for Best Management Practices for fuel reduction treatments included in the plan.
7. Identifies federal, state and local resources (fire, wildlife, regulatory agencies, landscape groups, etc.).

Purpose

The purpose of the Richmond CWPP is to protect human life and reduce loss of property, critical infrastructure and natural resources due to wildfire. The document builds on the Contra Costa County-wide CWPP and is intended to help agencies, communities and local homeowners define, plan and prioritize types of actions that will limit the damage associated with the inevitable wildland fire event. This plan can be used to increase the community's resilience to potential damage from wildfire by the following actions:

1. Increased collaborative planning and cooperative actions that will build useful relationships between communities and agencies, and with neighboring jurisdictions and land managing agencies. Including identification of community wildfire concerns and potential solutions.
2. Reduction of hazardous fuels in the WUI, including identification of grant funding opportunities at state and federal levels to leverage local funds.
3. Creation and maintenance of defensible space for structures and properties.
4. Reduction of structural ignitability hazards. Including background for future code updates to incorporate wildfire safety into retrofit, infill and new development within the city.
5. Planning of evacuation protocols and drills.

The stakeholders in this effort believe that the work outlined above requires a collaborative approach that combines the following elements:

- Development and implementation of strategic, cost effective, sustainable and environmentally sensitive hazardous fuel management plans.
- Educational programs that explain fire risk, promote voluntary citizen involvement and emphasize long-term strategies for creating and maintaining fire resistant communities.
- Application of resources to areas and projects where efficacy is most probable.

To that end, stakeholder participation and regular review are central to maintaining the ideas and priorities of the Fire Action Plan in the future. The dynamic nature of the plan will reflect changes in practices, technology and information available to prevent and minimize loss from wildfire.

City of Richmond Information

1.1 City Overview

City of Richmond was founded and incorporated in 1905. It is located, within the nine-county San Francisco Bay area, in western Contra Costa County. US Census Bureau estimates its population as 110,037 as of the 2017 *American Community Survey 1-year estimates*. The census also lists the City with a total area of 30.1 square miles for a total of 3,660.9 people per square mile.¹

Median income is \$67,102, about two-thirds of the amount in the San Francisco-Oakland-Hayward CA metro area median of \$101,714. The median age is 35.1, a little less than the median age in California of 36.5. Sixty-six (66%) of the population is age 18 to 64.

Richmond has experienced a relatively moderate rate of growth with a 6 percent population increase since 2000. There are currently 36,973 housing units within the City, averaging 2.87 persons per household.²

Major nearby cities and employment centers include: the City of Oakland, 9 miles to the south; the City of San Francisco, 17 miles west; and the City of San Jose, 50 miles south.

Richmond's land mass forms a promontory that stretches into the San Francisco and San Pablo bays. This 32-mile shoreline defines a significant portion of the City's borders to the north, west and south. Richmond is one of a few Bay Area cities that boast over 6,300 acres of parks and open space including local, regional, state and national resources, greenways and trails.³ Neighboring San Francisco and Marin County provide attractive backdrops from Richmond across the Bay. The cities of San Pablo, Pinole and El Cerrito, as well as unincorporated areas of Contra Costa County, border Richmond to the north and south. The Berkeley Hills, San Pablo and Sobrante ridges frame the eastern edge of the City.

Richmond city government operates under a council-manager system with seven members (including mayor and vice mayor) elected to alternating four-year terms. Four council members constitute a quorum for the transaction of business. The Mayor has the power to appoint, as well as ceremonial duties, presiding over council meetings, and meeting visiting dignitaries. The Office of the City Manager administers official city business. The City Council



City of Richmond is located in the western portion of Contra Costa County.

Source: Marvin Gardens Real Estate
<http://www.scottselmanoff.com>

¹ Source: <https://censusreporter.org/profiles/16000US0660620-richmond-ca/> Accessed 7/2/2016.

² Source: Richmond Annex to the Contra Costa County Local Hazard Mitigation Plan, Draft Final 1/1/18 pg 12-1 through 12-19 (323-352 <https://www.contracosta.ca.gov/DocumentCenter/View/48894/Contra-Costa-County-Draft-Local-Hazard-Mitigation-Plan-Volume-2-January-31-2018?bidId> Accessed 8/27/19.

³ Source: Richmond General Plan 2030, adopted 2012. <http://www.ci.richmond.ca.us/2608/General-Plan-2030>, Accessed 8/27/19.

will assume the responsibility for the adoption of this plan, and the Fire and Planning and Building Services Departments will oversee its implementation.

Transportation

Richmond is home to two of the most heavily traveled freeways in the San Francisco Bay Area. The city also is connected to the regional with major interstate highways and regional transportation systems. These include north-south freeways of I-80 and east-west freeway I-580. These major interstates are supplemented by routes of regional significance including: Richmond Parkway, San Pablo Avenue, San Pablo Dam Road, 23rd Street, Carlson Boulevard, Central Avenue, Cutting Boulevard, El Portal Drive and Macdonald Avenue. Loss of function of any of these routes can have direct regional impacts that could be felt nationwide. Vehicle based assessments of 38 key roadway segments throughout the City indicate most operate well under their maximum capacity. However, several segments of Interstate 80, 22nd and 23rd streets in the downtown currently operate beyond their design capacity with traffic delays a common occurrence⁴.

The Richmond-San Rafael Bridge is a key regional crossing for North Bay travelers connecting Contra Costa and Marin counties. Interstate 580 connects to the bridge. The Richmond Parkway also provides direct connection to Interstate 80 near Pinole.

Mass transit includes buses that use these highway corridors, ferries and commuter rail. AC Transit operates local bus service to key destinations in Richmond, as well as providing trans-bay service to San Francisco. Other transit providers include: Golden Gate Transit with connections to San Rafael, WestCAT with a commute route to El Cerrito Del Norte BART Station and Hercules Transit Center. The Richmond Intermodal Transit Center near the Richmond BART station provides links between BART Amtrak, AC Transit and WestCAT. Commuter rail lines connect to Contra Costa county, Alameda county and San Francisco (Bay Area Rapid Transit, BART), San Jose and Sacramento (AMTRAK Capitol Corridor) and Southern California (AMTRAK San Joaquin). Ferries provide another commuter route, connecting across San Francisco Bay from Vallejo. Richmond lies in the normal flight path of 3 airports: San Francisco International, Oakland International and Travis Air Force Base.

Two key railroad companies have routes through Richmond. Over the years Union Pacific Corporation (UP) has grown by acquiring other railroads.⁵ The formerly Southern Pacific line runs parallel I-80 through Richmond, along the San Pablo Bay to Martinez where it crosses the Suisun Bay. UPs main competitor is the Burlington Northern Santa Fe (BNSF) Railway, the nation's second largest freight railroad, which also primarily services the Continental U.S. west of the Mississippi River. Together the two railroads operate all transcontinental freight rail lines in the U.S. BNSF has the terminus of its transcontinental route in Richmond. It owns track formerly developed by Santa Fe Railroad.⁶ Richmond Pacific rail also operates various tracks in the City, primarily south of Interstate 580.

The Port of Richmond is northern California's most diversified cargo handler with a federally maintained deep-water channel. The Port encompasses three city-owned and approximately 20 private-owned terminals for handling bulk liquids, dry bulk materials, metals, vehicles and break-bulk cargoes. It handles approximately 19 million tons of freight annually with the majority of oil and other petroleum products and bulk cargos including

⁴ Source: Richmond General Plan 2030, adopted 2012. <http://www.ci.richmond.ca.us/2608/General-Plan-2030>. Circulation Element pg 4.11. Accessed 8/27/19.

⁵ Source: <http://www.up.com/> Accessed 8/27/19.

⁶ Source: <http://www.bnsf.com/> Accessed 8/27/19.

coke, aggregate and other building materials.⁷ Highway 580 passes through the port area and connects to transcontinental east-west I-80 and the Richmond-San Rafael Bridge that leads to north-south US Highway 101. The two major transcontinental railroads, BNSF and UP, also serve the Port.

Geographic Features

Richmond is located at the north end of the East Bay Hills. The City is bounded by the Berkeley Hills, San Pablo Ridge, Sobrante Ridge and Point Richmond. Elevations begin at sea level and reach over 1,000 feet along the San Pablo Ridge. The City actively protects its hills and ridges and associated natural features through a Hillside Ordinance. The geographic features shape the road network, where people live and work, and results in numerous people inhabiting areas in the eastern portions of Richmond that are more difficult to access under emergency conditions.

Climate, Temperature and Rainfall⁸

Richmond, like much of the coastal East Bay, enjoys a very mild Mediterranean climate year round. The climate is slightly warmer than the coastal areas of San Francisco, the Peninsula, and Marin County; it is however more temperate than areas further inland. The average highs range from 57 °F (14 °C) to 73 °F (23 °C) and the lows between 43 °F (6 °C) to 56 °F (13 °C) year round. Richmond usually enjoys an "Indian summer," and September is, on average, the warmest month. January is on average the coldest month. The highest recorded temperature in Richmond was 107 °F/41.6 °C in September 1971 while the coldest was 24 °F/-4.4 °C in January 1990.

The rainy season usually begins in late October and ends in April with some showers in May. Most of the rain occurs during stronger storms, which occur between November and March and drop 3.3 to 4.91 inches of rain per month. January and February are the rainiest months.

Like most of the Bay Area, Richmond is made up of several microclimates. Southern parts of the city and the ridges receive more fog than northern areas. Summer temperatures are higher in inland areas, where the moderating influence of San Francisco Bay is lessened. The average wind speed is 6 to 9 miles per hour with stronger winds from March through August; the strongest winds are in June. Morning humidity is 75 percent to 92 percent year round; afternoon humidity is more variable. This percentage is in the high 20s to mid-30s May through October (the summer months) and climbs or descends through 40 to 70 percent during the winter.

Natural Resources

Richmond contains an abundance of vegetative, water, air, and biotic and agricultural resources. The western areas are highly industrialized, while the central and eastern sections contain suburban residential and commercial areas. Adjacent unincorporated areas to the east are interspersed with agricultural and livestock grazing lands along with parklands, watershed and other undeveloped areas. Richmond and its neighboring cities in the eastern portion of Contra Costa County have adopted Urban Growth Boundaries and

⁷ Source: Richmond General Plan 2030, adopted 2012. <http://www.ci.richmond.ca.us/2608/General-Plan-2030>. Circulation Element pg 4.11. Accessed 8/27/19.

⁸ Source Richmond Annex to the Contra Costa County Local Hazard Mitigation Plan, 2018. <https://www.contracosta.ca.gov/DocumentCenter/View/48894/Contra-Costa-County-Draft-Local-Hazard-Mitigation-Plan-Volume-2-January-31-2018?bidId> Accessed 8/27/19

policies reflecting a strong commitment to protecting the natural and agricultural resources within and surrounding their respective jurisdictions.⁹

Watersheds

Richmond has seven primary watersheds that drain from El Cerrito/ Kensington Hills and San Pablo Ridge towards Richmond, including: San Pablo, Garrity, Rheem, Wildcat, Baxter, Cerrito and west Richmond watersheds. Typically the headwaters are in the East Bay Hills and they drain west through the alluvial plain to the San Francisco Bay.¹⁰

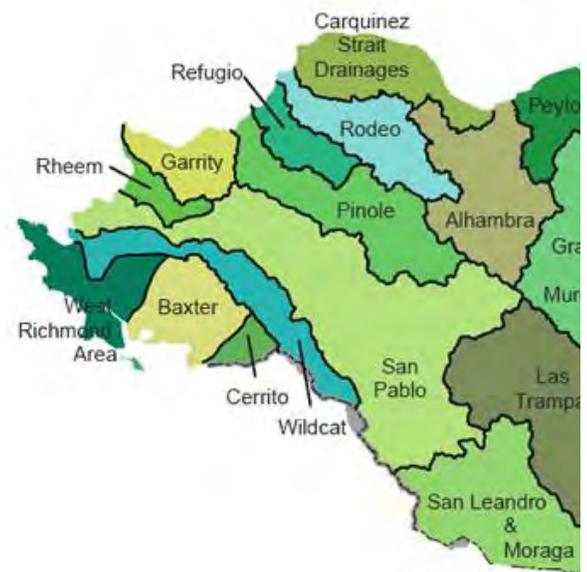
Vegetation and Wildlife Habitat

The vegetation and wildlife habitats of Richmond are similar to those throughout Contra Costa County; consisting of many ecological communities including:¹¹

- Grass dominated communities: predominantly annual grasslands dominated by grasses and forbs, but also areas of native grassland, alkali grasslands (where grasslands overlay alkali soils) and ruderal (disturbed areas with sparse typically weedy non-native vegetation). Oak savannah, where tree cover is 5-10% and shrubs are sparse, can also be classified in these grass dominant areas.
- Shrub dominated communities: wet north coastal scrub (northeast facing scrub or north coastal Franciscan scrub); dry north coastal scrub (southwest facing scrub or coyote brush-sagebrush scrub; manzanita-chinquapin chaparral; emergent coyote brush scrub.
- Forest or woodland communities: oak woodland (often with 100% tree canopy cover); mixed evergreen forest (with California Bay, madrone and foothill pine); transition between oak woodland and mixed evergreen may be gradual with live oaks as common codominants.
- Riparian woodland/ scrub associated with streams and permanent water sources. May contain understory of shrubs and forbs. Wetlands, both permanent and seasonal, as well as aquatic habitats are also found in the county.
- Non-native communities: eucalyptus; Monterey pine; predominantly non-native grasslands; French and Scotch broom.
- Other landscape features: rock outcrops, springs and seeps; landslides; ecotones; disturbed areas; landscape areas, irrigated agriculture (both pasture and croplands).

Numerous plants and animals that are designated as rare, threatened or endangered species or are candidates for such designation occur in Richmond. These include both federally and state-listed species. Information about Federally protected species, vegetation and habitat is included in the *Best Management Practices Guidebook for Fuel Management Treatments in Contra Costa County* (developed for in 2009 as part of the

West Contra Costa Watersheds



⁹ Source: East Alameda County Conservation Strategy <http://eastalco-conservation.org/documents.html>

¹⁰ Source: Contra Costa County Watershed Atlas. 2003 <https://www.ccleanwater.org/watersheds/watersheds-in-contra-costa-county> accessed 8/27/19.

¹¹ Source: East Contra Costa HCP/NCCP. October 2006.

Contra Costa County CWPP) and the *Vegetation Management Almanac for the East Bay Hills*.¹²

Richmond contains special status plant species including¹³:

California seablite	Suisun Marsh aster	pallid manzanita
Diablo helianthella	alkali milk-vetch	soft bird's-beak
Loma Prieta hoita	bent-flowered fiddleneck	western leatherwood
Santa Cruz tarplant	fragrant fritillary	

There are also many special status wildlife species located in Richmond, including:

Alameda song sparrow	San Pablo vole	salt-marsh harvest mouse
Bridges' coast range shoulder band	hoary bat	salt-marsh wandering shrew
California black rail	monarch butterfly	short-eared owl
California clapper rail	northern harrier	silver haired bat
San Pablo song sparrow	pallid bat	white-tailed kite

Public Lands Management

There are two agencies that manage large areas of public lands in or adjacent to Richmond:

East Bay Regional Park Districts (EBRPD) offers developed and dispersed recreation opportunities in over 110,000 acres in Alameda and Contra Costa Counties. Adjacent to the City of Richmond there are six large regional parks/ regional shorelines including: Kennedy Grove, Miller Knox Regional Shoreline, Point Molate Beach Park, Point Pinole Regional Shoreline, Sobrante Ridge Regional Park and Wildcat Canyon Regional Park. Five of these parks are at risk from wildfire (except for Point Molate Beach).

The EBRPD Fire Department has the lead for the Fuels Management Program and follows the Wildfire Hazard Reduction and Resource Management Plan and Environmental Impact Report (approved 2010). They plan work in conjunction with park stewardship, park operations, park supervisors, and other departments to develop an annual work plan approved by their Board of Directors. EBRPD uses many methods to modify or reduce the amount or availability of wildland fuels including hand crews, prescribed fire, mowing, weed-eating, masticating, and animal grazing. Dense tree stands are often thinned to remove some of the trees that typically contributes to fuel loading and to reduce the potential for wildfire to spread in the tree canopies.¹⁴

East Bay Municipal Utility District (EBMUD) owns and manages approximately 28,000 acres of land and water areas and is responsible for management surrounding four reservoirs providing drinking water to 1.4 million East Bay customers. South of Richmond's May Valley community is the San Pablo Reservoir, including a developed recreation area and recreational trail system. They also manage one non-reservoir watershed basin (Pinole Valley to the east of Richmond).

¹² *Best Management Practices Guidebook for Fuel Management Treatments in Contra Costa County* is available online at www.diablofiresafe.org/publications.html - BMP

¹³ Source: Richmond General Plan 2030, adopted 2012. <http://www.ci.richmond.ca.us/2608/General-Plan-2030>. Circulation Element pg 4.11. Accessed 8/27/19. Conservation, Natural Resources and Open Space Element.

¹⁴ For more detail see: <https://www.ebparks.org/about/stewardship/fuelsplan/default.htm#rec-rep>

The EBMUD fuels management program follows their Fire Management Plan, East Bay Watershed Master Plan and the Low Effect East Bay Habitat Conservation Plan.¹⁵ EBMUD uses many methods to modify or reduce the amount or availability of wildland fuels including hand crews, mowing/ weed-eating, tree thinning, prescribed fire, masticating and animal grazing.

Federal Lands

National Park Service (NPS). The National Park Service owns and manages “Rosie the Riveter-World War II Home Front National Historical Park” within the City of Richmond. The Pacific West Regional Office is located in San Francisco and oversees NPS owned and managed lands throughout the San Francisco Bay region and western United States. The Fire Management Office exchanges information with other Contra Costa County stakeholders on best management practices for wildfire management.

Other Land Managing Entities

Pacific Gas and Electric Company: Pacific Gas and Electric Company (PG&E), incorporated in California in 1905, is one of the largest combination natural gas and electric utilities in the United States. Based in San Francisco, their service area stretches from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada in the east. PG&E utilizes a program of Integrated Vegetation Management (IVM) to manage vegetation on transmission rights-of-ways. Properly maintained right-of-ways (ROW) are essential for the safety of the public and workers. The long-term goal of their vegetation management program is to provide for public safety, worker safety, and environmental safety while providing for reliable service. Their three-prong Community Wildfire Safety Program focuses on 1) wildfire safety inspections and enhanced vegetation management with 15’ minimum clearance from conductors and all overhead tree limbs, 2) hardening the system with equipment for improved reliability and 3) public power safety shutoffs (PSPS) when critical fire weather conditions occur.¹⁶

Union Pacific Railroad: Union Pacific operates North America's premier railroad franchise, covering 23 states in the western two-thirds of the United States providing a critical link in the global supply chain. The Union Pacific Railroad network is the largest in the United States and is serviced by 45,400 employees. From 2007-2013, Union Pacific invested more than \$21.6 billion in its network and operations to support America's transportation infrastructure. The railroad's diversified business mix includes: agricultural products, automotive, chemicals, coal, industrial products and intermodal. Union Pacific serves many of the fastest-growing U.S. population centers, operates from all major West Coast and Gulf Coast ports to eastern gateways, connects with Canada's rail systems and is the only railroad serving all six major Mexico gateways. Union Pacific provides value to its roughly 10,000 customers by delivering products in a safe, reliable, fuel-efficient and environmentally responsible manner.¹⁷

BNSF Railroad: BNSF Railway is one of North America’s leading freight transportation companies, with a rail network of 32,500 route miles in 28 states and three Canadian provinces. BNSF is one of the top transporters of the products and materials that help feed, clothe, supply and power communities throughout America and the world. They transport a mix of agricultural products, consumer products, industrial products and coal. BNSF moves

¹⁵ Source: [https://www.ebmud.com > index.php > download_file > force > FMP_0602_1](https://www.ebmud.com/index.php/download_file/force/FMP_0602_1) , <https://www.ebmud.com.EBWMP-2018-FINAL.pdf>, https://www.ebmud.com.hcp_0.pdf accessed 8/27/19

¹⁶ Source: <http://www.pge.com/> and https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/public-safety-power-shutoff-faq.page accessed 8/27/19.

¹⁷ Source: <http://www.up.com/> Accessed 8/28/19.

those goods more safely and efficiently, on significantly less fuel, with fewer emissions than the all-highway alternative hauling 1 ton of freight 500 miles on 1 gallon of diesel fuel. They are headquartered in Fort Worth Texas with over 44,000 employees.¹⁸

Kinder Morgan: Kinder Morgan's Richmond Products Terminal is part of a joint venture agreement between Kinder Morgan and BP Products North America. Located in Richmond, California, the terminal has a total capacity of approximately 645,000 barrels of storage for petroleum products. Richmond Products Terminal is operated by Kinder Morgan and served by the SFPP pipeline system in the Bay Area.¹⁹

Kinder Morgan's SFPP pipeline system consists of the North Line, approximately 864 miles of trunk pipeline in five segments that transport products from Richmond and Concord, Calif., to Brisbane, Sacramento, Chico, Fresno, Stockton and San Jose, Calif., and Reno, Nevada. The products delivered through the North Line come from refineries in the San Francisco Bay Area and from various pipeline and marine terminals.²⁰

Chevron Richmond Refinery

Established in 1902, the Chevron Richmond Refinery creates motor gasoline, jet fuel, diesel and lubricating oils. Located on 2,900 acres it is owned and operated by Chevron Corporation and employs almost 3,500 workers.²¹ Gasoline produced at the Richmond Refinery fuels 20 percent of cars on Northern California roads. Approximately 65 percent of planes at major airports in the Bay Area use jet fuel made at the Richmond Refinery. The Refinery is the only facility on the West Coast that produces lubricating base oils. Chevron's revolutionary fuel additive Techron was invented in Richmond.

Fire Protection Agencies

Contra Costa County can be divided into three different types of fire protection areas: Federal Responsibility Areas (FRA), State Responsibility Areas (SRA) and Local Responsibility Areas (LRA). The efforts of fire protection agencies are made even more effective through common training in the national incident management systems (NIMS), incident command system (ICS) and the California standardized emergency management system (SEMS) that are used to manage response to multi-agency, multi-jurisdiction emergencies. Master mutual aid plans and automatic aid agreements also bring together resources.

California Forestry and Fire Protection Agency (CAL FIRE) provides fire protection for SRA lands throughout the state and in Contra Costa County. These include East Bay Regional Park District lands and unincorporated lands adjacent the City of Richmond. Battalion 6 of the CAL FIREs Santa Clara Unit covers Contra Costa County from a station located on Marsh Creek Road (south of Clayton). The Battalion works with a complex network of agencies, including 13 local and federal fire agencies. Richmond is one of nine departments that border Cal Fire state responsibility areas (SRA) in Contra Costa county. A mutual threat zone (MTZ) has been established between the City of Richmond Fire Department's local responsibility area (LRA) and the CAL FIRE jurisdiction. By both Richmond Fire and CAL FIRE responding to fires in these MTZs the response to a fire is dramatically increased.

The Local Responsibility Area (LRA) is protected by both professional and volunteer fire fighting forces. Surrounding the City of Richmond are five different entities, in addition to

¹⁸ http://www.bnsf.com/about-bnsf/pdf/fact_sheet.pdf

¹⁹ Source: https://www.kindermorgan.com/pages/business/products_pipelines/phoenix_overview.aspx Accessed 8/28/19.

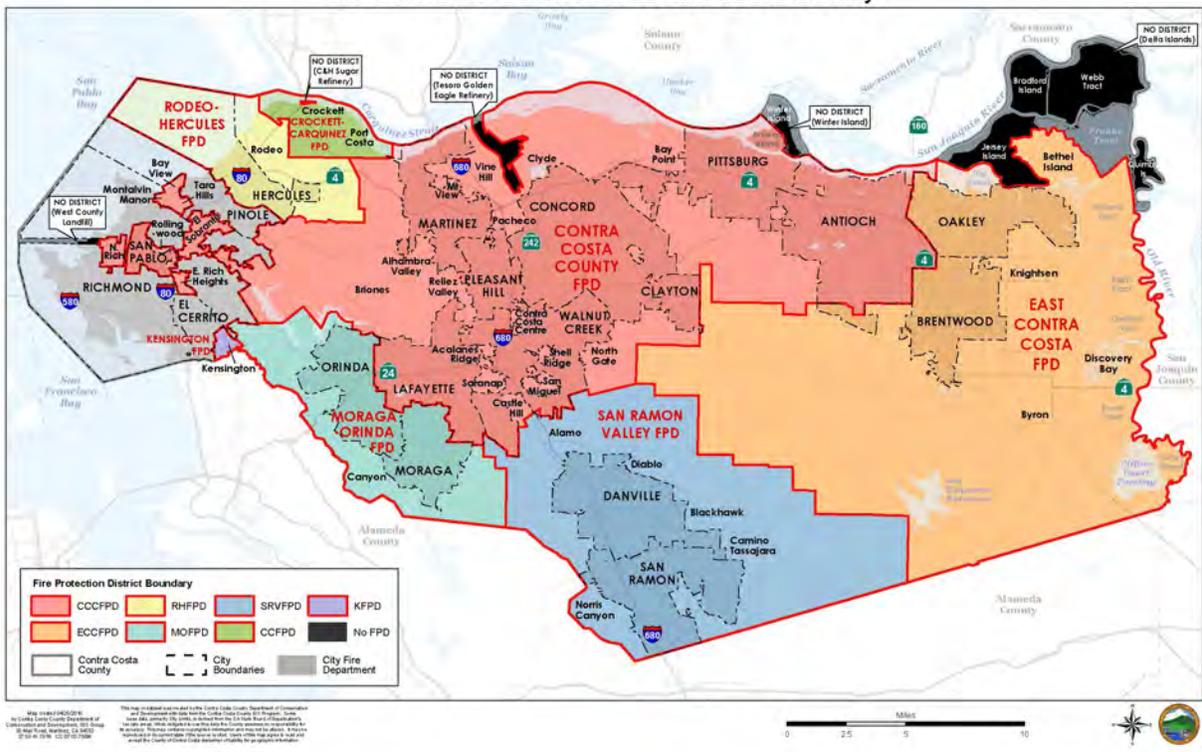
²⁰ Source: https://www.kindermorgan.com/business/products_pipelines/sfpp.aspx Accessed 8/27/19.

²¹ Source: <https://richmond.chevron.com/> Accessed 8/27/19.

Richmond Fire, that have direct fire protection responsibility on the adjoining lands including: Contra Costa County Fire Protection District, Pinole Fire, Rodeo-Hercules Fire, Crockett Fire and East Bay Regional Park Fire. Mutual aid and automatic aid agreements with these various organizations increase the ability of the fire departments to respond to wildfire.

Adjacent Fire Protection Agencies
 California Department of Forestry and Fire Protection (CAL FIRE)
 Contra Costa County Fire Protection District
 East Bay Regional Parks District Fire Department
 El Cerrito Fire Department
 Pinole Fire Department
 Richmond Fire Department
 Rodeo-Hercules Fire Protection District

Fire Protection Districts in Contra Costa County



1.2 The Planning Process & Stakeholders

The development of the Richmond CWPP was made possible through a grant from the California Fire Foundation. The grant would not have been awarded without matching in kind services of many stakeholders.

The planning process followed an eight-step process that included 4 stakeholder meetings. Materials were posted on the City of Richmond web site at <http://www.ci.richmond.ca.us/3627/Wildfire-Information>

City Departments, organizations and special interest groups, as well as the residents of Richmond participated in the development and review of this CWPP. Stakeholders included:

CAL FIRE Santa Clara Unit
East Bay Municipal Utilities District
East Bay Regional Park District Fire Department
El Cerrito Fire Department

City of Richmond Fire Department
City of Richmond Planning Department
Residents of the City of Richmond

1.3 Integration with Other Plans & Initiatives

Success of the Community Wildfire Protection Plan includes integration with existing plans and initiatives. The following plans and programs currently include components compatible with the community wildfire protection strategy:

Climate Action Plan—The City’s Climate Action Plan includes projects for reducing greenhouse gas emissions and adapting to likely impacts of climate change (including an increase of wildfires).

General Plan 2030 – Public Safety Element —The Richmond General Plan includes “Public Safety & Noise” element to protect the community from unreasonable risk by establishing policies and actions to avoid or minimize the following hazards:

- Natural Hazards including wildland fires
- Man-made Hazards such as hazardous materials exposure

In compliance with the state law, the Public Safety Element contains implementing actions for 1) risk management of natural and human-caused disasters, 2) high levels of police and fire service and 3) emergency preparedness. The Richmond CWPP offers support for many of these actions.

Health in All Policies – The Health in All Policies (HiAP) strategy and ordinance set a framework of collaboration within city departments, as well as with community based organizations and other government agencies to address community health, equity and sustainability in Richmond. The 2015 HiAP Report is a recap of the influence and progress of Richmond’s Health in All Policies ordinance and strategy and identifies how it will continue to grow over the next decade (R.M.C 9.15) since its adoption in December 2015.

While the HiAP report does not include any specific mention of to community wildfire protection, it offers the opportunity to collaborate within the framework; using the identified four strategies, to align actionable items for wildfire safety that leverage the City’s budget and resources to promote community health, equity and sustainability.

Richmond Emergency Operations Plans—The Emergency Operations Plan includes mitigation considerations to reduce risk exposure to the community. The Richmond CWPP provides opportunities to further mitigation related to the wildfire responses identified in the plan.

Richmond's Local Hazard Mitigation Plan (LHMP) (Richmond Annex to the Contra Costa Local Hazard Mitigation Plan) The LHMP presents a local ranking for the City of Richmond of all hazards of concerns. Wildfire ranked 5th behind earthquake, landslide, severe weather, and sea level rise. It tied with flood, dam and levee failure and was ranked higher than Tsunami and drought. 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.

The LHMP identifies codes, plans and programs that provide opportunities for integration of the CWPP with LHMP goals, including:

- Increase efforts to reduce hazards in existing development in high wildfire hazard areas (identified as wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat) through improving engineering design and vegetation management for mitigation, appropriate code enforcement, and public education on defensible space mitigation strategies. (R-29)
- Better inform residents of comprehensive mitigation activities (e.g. use of fire-resistant roofing and defensible space in high wildfire threat and wildfire-urban-interface areas, structural retrofitting techniques for older homes) through workshops, publications, and media announcements and events. (R-30 & COR-22)
- Sponsor the formation and training of Community Emergency Response Teams (CERT) training through partnerships with local businesses. (COR-20)

Urban Greening Master Plan - The Urban Greening Master Plan was reviewed in relation to community wildfire protection. The approved street tree list does not include any species that are considered fire hazards (due to shedding bark or volatile oils). The plan offers the opportunity to discuss the selection of species, tree placement locations and long-term management that reduce spread of wildfire, while continuing to support the vision, goals and policies of urban greening.

Management of existing trees with highly flammable characteristics located in the very high fire hazard area, such as blue gum eucalyptus (*Eucalyptus globulus*), Monterey Pine (*Pinus radiata*) and black acacia (*Acacia melanoxylon*), should be part of the overall hazardous fuel management program developed on a site-by-site basis. These trees can be pruned to reduce the potential for crown fire and have regular maintenance to reduce flammable litter, sprouts and chance of ignition, or they can be removed as appropriate.

Vegetation Management Standards – Resolution 192-95 established Fire Hazard Reduction Vegetation Management Standards. The standards use three basic methods to manage vegetation fuels: firebreaks, fuel breaks and ornamental landscaping. It includes guidelines to conform to State Law and national fire protection standards to address most situations found on private property in Richmond. These include managing vegetation along the property line and around structures. While the terms “firebreaks” and “fuelbreaks” are now called “defensible space” the resolution adopted in 1995 continues to provide sound guidance for reducing the potential for damage from wildfire. The standards also include limited structural requirements, including spark arresters and Class A fire resistive rating. Additional home hardening recommendations are included later in this CWPP that expand these recommendations. Richmond's current Defensible Space Inspection process uses both Resolution 192-95 and the State forest and fire laws (Public Resource Code PRC 4291) as enabling laws for enforcement of these standards.

Note: The Vegetation Management Standards are in the process of being updated by the Fire Marshal.

Regional Issue – Tree Mortality and Sudden Oak Death. California has been facing the worst epidemic of tree mortality in modern history. Five years of drought, combined with the increased infestation of native bark beetles, have contributed to the death of millions of trees on federal, state, and private lands across California. Fortunately, Richmond has had

relatively minor tree mortality compared to the Sierra Region, but pine bark beetle has been attacking trees in the Chevron Refinery area. As Richmond continues to experience the impacts of climate change it is likely that tree mortality will increase in scale.

In addition to tree mortality, the Bay Area has been infested with Sudden Oak Death from *Phytophthora ramorum*.²² To date Contra Costa County has had relatively isolated infections in the wildlands and urban areas in the western portion of the county, including May Valley and East Richmond Heights (where the fog reaches). However, the potential for spread exists and the County is in quarantine with restrictions for transporting materials, including chipped wood out of the region already infected.

²² Source: <http://www.suddenoakdeath.org/sod-california-map/>

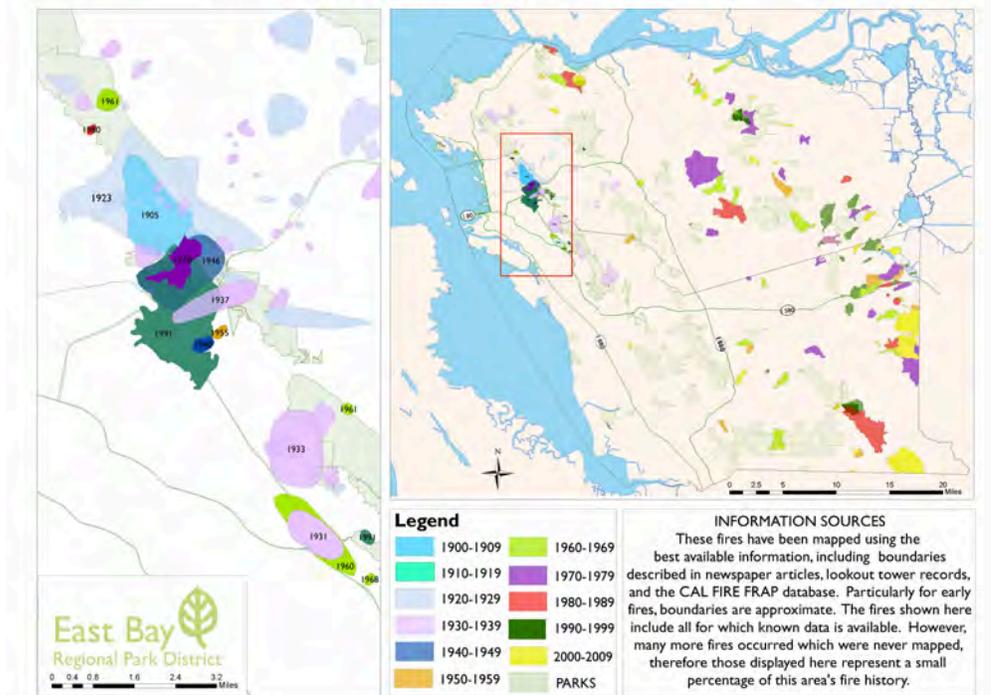
Fire Hazard and Risk in the Wildland Urban Interface

2.1 Wildfire Environment

Wildfires are a part of the natural ecosystem in the Richmond area. The Mediterranean-like climate with no summer rains, the steep, wind-conductive topography, and fire adapted native vegetation set the stage for periodic burns. The fire environment is made more dangerous by the abundant hazards and risk associated with a large population and dense pattern of development. The urban side of the wildland-urban interface brings new hazards into the complex equation with introduced vegetation, structures constructed of flammable materials, industrial operations with hazardous materials and many potential ignition sources.

The region surrounding Richmond has a rich history of fires since the 1950s resulting in loss of lives, property and natural resources. The most recent was on July 5, 2019; a 24 acre fire in Franklin Canyon (east of Richmond). The 1991 "Tunnel Fire" took place seven miles south in the Berkeley and Oakland hills. The 1991 fire destroyed 2,900 structures, the largest recorded number in California history, and is the state's second deadliest fire with 25 fatalities.¹ Historically, more frequent wildfires of lesser intensity were common. Drought and human behaviors, particularly in the arenas of land-use and fire suppression, have had a profound

Fire History in the East Bay



Historically fires in Contra Costa County have clustered in 3 areas: East Bay Hills and along border with Alameda County; east areas of county around Mount Diablo and north areas of central county around Martinez.

¹ Source: http://cdfdata.fire.ca.gov/incidents/incidents_details_info?incident_id=908. And <http://www.fire.ca.gov/SCU/> accessed 8/26/19.

impact on the County's fuel complex and fire regime. This increases the possibility of catastrophic wildfire, especially as the hazards of vegetation, topography, structures and fire weather are present.

Weather

Chief among fire hazards is the area weather. Despite efforts to improve neighborhood safety and fire fighting capability, uncontrollable firestorms will occur under the extreme but periodic conditions of "Red Flag" weather days. The National Weather Service issues "Red Flag" warnings when weather elements such as low relative humidity and strong winds could lead to rapid increases in wildfire activity.

"Red Flag" weather can mean the occurrence of strong, hot, dry offshore winds (technically called "foehn" winds). These winds are known locally as "Diablo Winds" and they come from the north and northeast. They carry extremely dry air at high velocity. They quickly desiccate vegetation and other flammable materials and can push a fire down or up a slope with amazing speed. These can occur at any time of year, but are especially dangerous in the driest months of summer and fall. During these times, fighting a fire becomes far more difficult.

Fuel – Structures and Vegetation

Due to the number and density of homes built in the high fire hazard zone and changes in the natural fire-cycle, Richmond has areas of highly flammable structures amongst an over-accumulation of flammable vegetation. This massive fuel load of homes and vegetation in the area's steep topography makes fires very difficult to contain. In addition, non-native and invasive weedy vegetation has replaced the more fire resistive and ecologically stable native species in many places, adding to the threat.

Years of drought and associated pests and disease have increased tree mortality. The Contra Costa County region has seen a decline in tree health due to drought, pine beetles and Sudden Oak Death. Ongoing tree mortality assessments will provide additional information on declining conditions.

Topography

The area's steep topography, with canyons and swales, influences fire behavior and in many instances intensifies fire effects. Westward facing slopes are more arid (due to long exposure to the afternoon sun) and thus more combustible. The narrow roads in the steep hillside areas of Richmond make ingress and egress difficult and delay fire fighter response time.

2.2 Wildland Urban Interface Risk & Hazard Assessments

The wildland urban interface (WUI) is defined as an area in which wildlands and communities are sufficiently close to each other to present a credible risk of fire spreading from one to the other. Nationally, the WUI has gained increasing importance as more Americans build homes on the urban edge and in rural settings adjacent to public lands.

The housing density and geography of Richmond is such that most of the developed areas not only border WUI areas, but also include conditions within the urbanized areas that can fuel wildfires. The community includes locations considered "*Very High Fire Hazard Severity Zones*" that are at significant risk for loss of life and property if a fire were to occur on a normal or extreme weather day. For the purposes of this plan, the CAL FIRE Fire Hazard Severity maps were used as a starting point to determine where significant fire hazards exist both in the

wildland and urban areas. Both Richmond and the adjacent EBRPD parklands have been identified as at significant risk from wildfire.

2.2.1. Potential for Wildfire to Occur

Factor 1 – Risk of Wildfire Occurrence

Fire History Locations

While there are no detailed records of past wildfires within the City of Richmond, Contra Costa County has a history of fire. The map “*Fire History in the East Bay*” shows many fires throughout the county over the past century. Three areas show clusters of fire:

- East Bay Hills – Richmond, El Cerrito Kensington and Alameda County boundary
- East areas of county around Mount Diablo, Walnut Creek, San Ramon
- North areas of central-county around Martinez.

The following wildfires of over 10 acres have been recorded in western Contra Costa County (near Richmond) in recent years (CAL FIRE, 2019²):

- July 5, 2019, Fellow Fire- burned 24 acres along Franklin Canyon Road.
- August 17, 2018, Alhambra Fire – Burned 30 acres off Highway 4 and Alhambra Ave. Martinez.
- June 16, 2018 Willow Fire – Burned 25 acres along Willow Pass Road at Evora Road.
- June 2, 2018 Glen Fire – Burned 23 acres along Glen Canyon Circle and Chaparral Drive, Pittsburg.
- July 7, 2017, Willow Fire – burned 370 acres along Springwood Court and California Street, Rodeo.
- July 24, 2016, Franklin Fire—Burned 40 acres along Cummings Skyway and Franklin Canyon, 6 miles southeast of Rodeo.
- June 24-25, 2015, Loma Fire—Burned 533 acres in Contra Loma Regional Park located in Antioch.

Fire History Patterns, Climate Change Impact and Ignitions

According to the 2013 State of California Multi-Hazard Mitigation Plan and the California Department of Forestry and Fire Protection, Contra Costa historically experiences wildfires every two to three years. With drought conditions in recent years, wildfires have occurred annually. There is limited information on fires in the immediate Richmond area. However, a regional look at the 15 significant fires in the vicinity of the Caldecott Tunnel from 1923 – 1991 shows a common pattern of ignitions during critical Diablo Wind conditions in the Fall, occurring every 10 to 20 years. Similar conditions occur in the Richmond area.

Climate change has the potential to affect multiple elements including: fire behavior, ignitions, fire management and vegetation fuels. Hot dry spells may dry out fuels faster and increase disease and insect infestations resulting in higher fuel loads. Increased winds may result in more erratic fire behavior making fires harder to contain.

Wildfire causes shown in CAL FIRE’s list of the top 20 deadliest and most destructive California wildfires typically relate to human activity.³ Causes have included powerlines, human related activities, vehicles and arson.

² Source: <https://www.fire.ca.gov/incidents> accessed 8/19/19

³ Source: https://www.fire.ca.gov/media/5512/top20_deadliest.pdf and https://www.fire.ca.gov/media/5511/top20_destruction.pdf accessed 8/19/19.

Top 20 Deadliest California Wildfires

FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1 CAMP FIRE (Powerlines)	November 2018	Butte County	153,336	18,804	86
2 GRIFFITH PARK (Unknown)	October 1933	Los Angeles	47	0	29
3 TUNNEL - Oakland Hills (Rekindle)	October 1991	Alameda	1,600	2,900	25
4 TUBBS (Electrical)	October 2017	Napa & Sonoma	36,807	5,633	22
5 CEDAR (Human Related)	October 2003	San Diego	273,246	2,820	15
6 RATTLESNAKE (Arson)	July 1953	Glenn	1,340	0	15
7 LOOP (Unknown)	November 1966	Los Angeles	2,028	0	12
8 HAUSER CREEK (Human Related)	October 1943	San Diego	13,145	0	11
9 INAJA (Human Related)	November 1956	San Diego	43,904	0	11
10 IRON ALPS COMPLEX (Lightning)	August 2008	Trinity	105,855	10	10
11 REDWOOD VALLEY (Powerline)	October 2017	Mendocino	36,523	544	9
12 HARRIS (Undetermined)	October 2007	San Diego	90,440	548	8
13 CANYON (Unknown)	August 1968	Los Angeles	22,197	0	8
14 CARR (Human Related)	July 2018	Shasta County, Trinity County	229,651	1,614	8
15 ATLAS (Powerline)	October 2017	Napa & Solano	51,624	783	6
16 OLD (Human Related)	October 2003	San Bernardino	91,281	1,003	6
17 DECKER (Vehicle)	August 1950	Riverside	1,425	1	6
18 HACIENDA (Unknown)	September 1955	Los Angeles	1,150	0	6
19 ESPERANZA (Arson)	October 2006	Riverside	40,200	54	5
20 LAGUNA (Powerlines)	September 1970	San Diego	175,425	382	5

** Fires with the same death count are listed my most recent. Several fires have had 4 fatalities, but only the most recent are listed.
 ***This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.

Top 20 Most Destructive California Wildfires

FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1 CAMP FIRE (Powerlines)	November 2018	Butte County	153,336	18,804	86
2 TUBBS (Electrical)	October 2017	Napa & Sonoma	36,807	5,633	22
3 TUNNEL - Oakland Hills (Rekindle)	October 1991	Alameda	1,600	2,900	25
4 CEDAR (Human Related)	October 2003	San Diego	273,246	2,820	15
5 VALLEY (Electrical)	September 2015	Lake, Napa & Sonoma	76,067	1,955	4
6 WITCH (Powerlines)	October 2007	San Diego	197,990	1,650	2
7 WOOLSEY (Under Investigation)	November 2018	Ventura	96,949	1,643	3
8 CARR (Human Related)	July 2018	Shasta County, Trinity County	229,651	1,614	8
9 NUNS (Powerline)	October 2017	Sonoma	54,382	1,355	3
10 THOMAS (Powerline)	December 2017	Ventura & Santa Barbara	281,893	1,063	2
11 OLD (Human Related)	October 2003	San Bernardino	91,281	1,003	6
12 JONES (Undetermined)	October 1999	Shasta	26,200	954	1
13 BUTTE (Powerlines)	September 2015	Amador & Calaveras	70,868	921	2
14 ATLAS (Powerline)	October 2017	Napa & Solano	51,624	783	6
15 PAINT (Arson)	June 1990	Santa Barbara	4,900	641	1
16 FOUNTAIN (Arson)	August 1992	Shasta	63,960	636	0
17 SAYRE (Misc.)	November 2008	Los Angeles	11,262	604	0
18 CITY OF BERKELEY (Powerlines)	September 1923	Alameda	130	584	0
19 HARRIS (Undetermined)	October 2007	San Diego	90,440	548	8
20 REDWOOD VALLEY (Powerline)	October 2017	Mendocino	36,523	546	9

***Structures* include homes, outbuildings (barns, garages, sheds, etc) and commercial properties destroyed.
 ***This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.

As a part of its Strategic Fire Plan⁴ the Cal Fire Santa Clara Unit (which includes Contra Costa County and the City of Richmond), tracked wildfire ignitions for the entire year 2017. The Unit experienced 336 fires, 20 of which were over 10 acres in size (6.5%). The ignition causes included:

1. Vehicles (12.8%). Catalytic converter failure and other maintenance issue remain the leading cause of fires caused by vehicles. This category also includes vehicle crashes of both automobiles and trucks.
2. Electric power (6.5%). Electrical power caused three out of the five largest fires in the unit. There are two distinct types: distribution caused (e.g. power lines and equipment) and power generation (e.g. windmills in Altamont Pass).
 Note: The co-occurrence of high winds causing downed powerlines or arcing can cause electric power ignitions to have a faster spread than other ignition types that are less correlated to winds (that increase the rates of fire spread).
3. Equipment (14%). One of the contributing factors in this category is the increasing number of people moving out into wildfire prone areas. Many members of the public do not realize that activities that would not have likely caused a fire in an urban environment (e.g. mowing the grass) as very likely to cause fires in wildland urban interface areas (weed whipping dry grass).
4. Miscellaneous causes (21.7%). This includes causes such as spontaneous combustion, fire ashes, shooting and other causes.
5. Undetermined (34.22%). This cause is utilized when the investigator cannot eliminate additional cause classifications.
6. Arson (5%).
7. Lightening (1%).
8. Illegal campfires and campfire escapes (1%).

⁴ Source: Cal Fire Santa Clara Unit Strategic Fire Plan. Revised July 2018. <https://osfm.fire.ca.gov/media/3121/fpppdf1619.pdf> Accessed 8/19/19.

9. Debris Fires (<1%).
10. Smoking (1%).
11. Playing with fire (2%).

EBMUD looked at causative agents for fires on its watershed from 1980-1997. Many ignitions were “unknown,” but known causes were similar to the CAL FIRE 2017 ignitions: arson, camping and picnic activities, power lines, fireworks, fuel reduction activities, smoking, children, automobiles and rekindles. Lighting caused only 2 out of the 174 fires analyzed. EBRPD did a similar analysis of 1,900 fires over twelve years in Alameda and Contra Costa Counties and reached similar conclusions.

While there has been no specific fire history developed for the City of Richmond, stakeholders and fire personnel familiar with the community’s fire history felt that these causes and patterns could be extrapolated to this area. Two additional ignition sources to consider for Richmond relate to the railroads and manufacturing / refineries. However, statistics on frequency of these potential ignition sources were not available.

Fire Weather

Another factor that has been assessed is fire weather or periods of “Diablo winds” that bring low relative humidity, higher temperatures and increased wind. Alameda and Contra Costa Counties have 11 remote automated weather stations (RAWS) that provide localized information on the weather. Many fire departments also take local weather readings to supplement these regional data. National Oceanic and Atmospheric Association’s National Weather Service also provides “red flag warnings” and “Fire Weather Watch” of periods of high fire danger. www.wrh.noaa.gov/firewx/cafw/



Communities at Risk

In association with the development of the National Fire Plan, the Federal Register published a list of Communities at Risk in 2001.⁵ Twenty-five communities in Contra Costa County were identified, including Richmond and East Richmond Heights. This list provided another confirmation that portions of Richmond are considered high priority areas for wildfire prevention. Note: Current legislation under consideration may require CALFIRE to update their communities at risk.

Factor 2 – Fuel Hazards

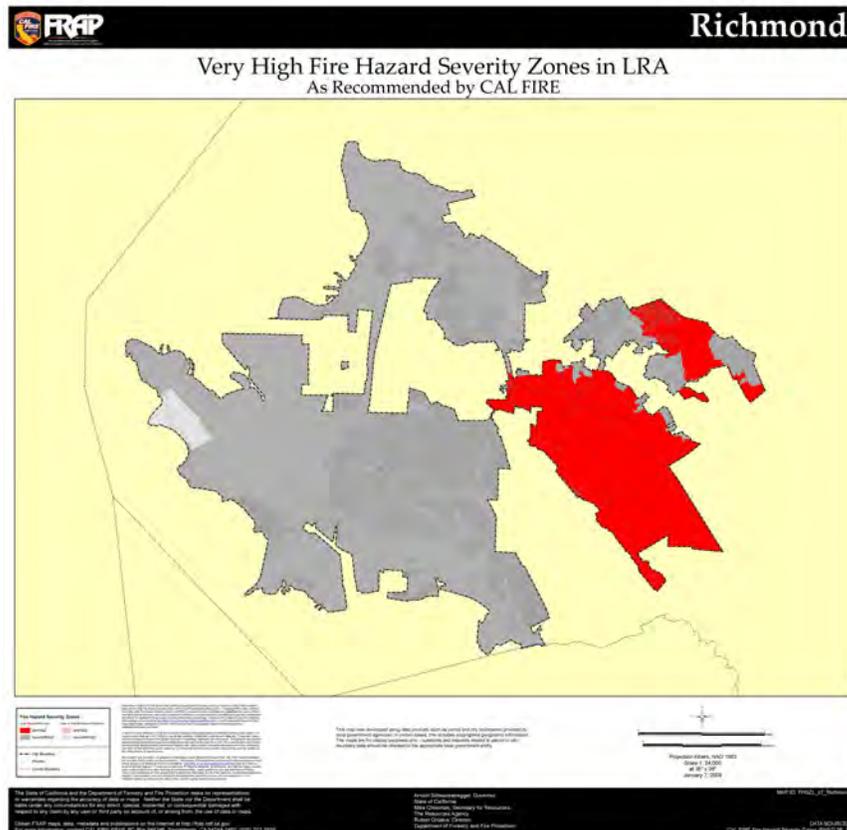
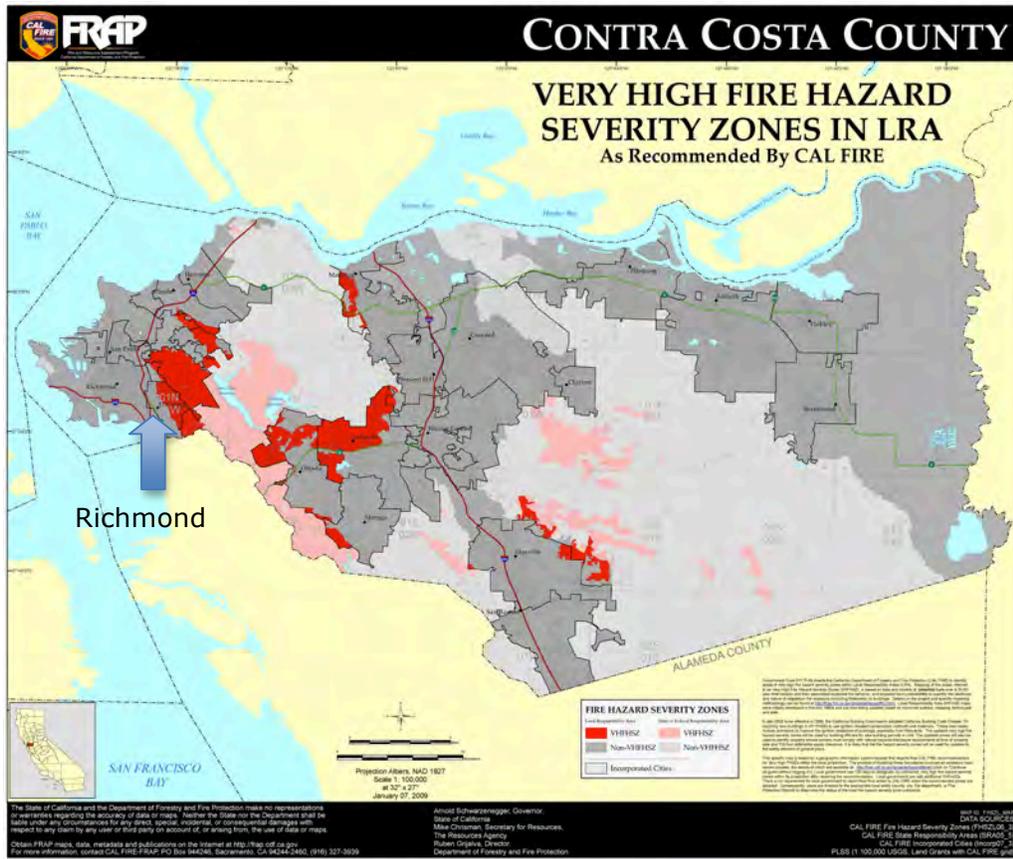
CAL FIRE Statewide Hazard Assessment Maps

The CAL FIRE statewide hazard assessment maps have served as the basis for the analysis of fire hazards in Contra Costa County. Very High Fire Hazard Severity Zones for State Responsibility Areas (SRA) and Local Responsibility Areas (LRA) are identified on these maps based on:

- Flame length modeled based on vegetation, topography and weather.
- Crown fire potential, ember production and ember movement
- Likelihood of burning based on fire history and other factors.⁶

⁵ Source: http://cdfdata.fire.ca.gov/fire_er/fpp_planning_car?filter_text=Contra+Costa&filter_field=county_name&action=Search accessed 2/8/2017

⁶ Map from: http://www.fire.ca.gov/fire_prevention/fhsz_maps_contracosta.php accessed 2/8/2017.

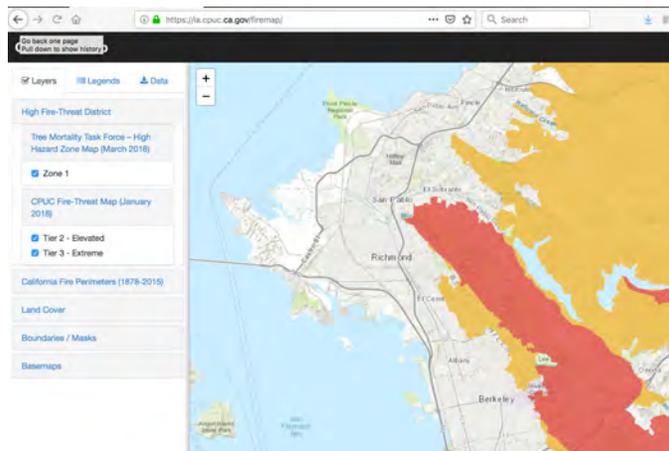


The hills portions of Richmond were identified as very high wildfire hazard severity zones, as well as the adjacent East Bay Regional Park District lands.

Two final assessments were considered:

In 2017 the California Public Utilities Commission established their final Fire-Threat Maps.⁷ If gusty winds and dry conditions, combined with a heightened fire risk, threaten a portion of the electric system, they may turn off electricity in the interest of public safety – a public safety power shut off (PSPS). The shut off may include both transmission and distribution lines. Pacific Gas & Electric (PG&E) implements these precautionary measures to help reduce the risk of wildfires as part of their Community Wildfire Safety Program.⁸

In 2010 East Bay Regional Park District adopted the Wildfire Hazard Reduction and Resource Management Plan.⁹ The plan recommends treatment areas for fuel reduction in five regional parks are adjacent to the Richmond: Kennedy Grove, Miller Knox, Point Pinole and Sobrante Ridge.

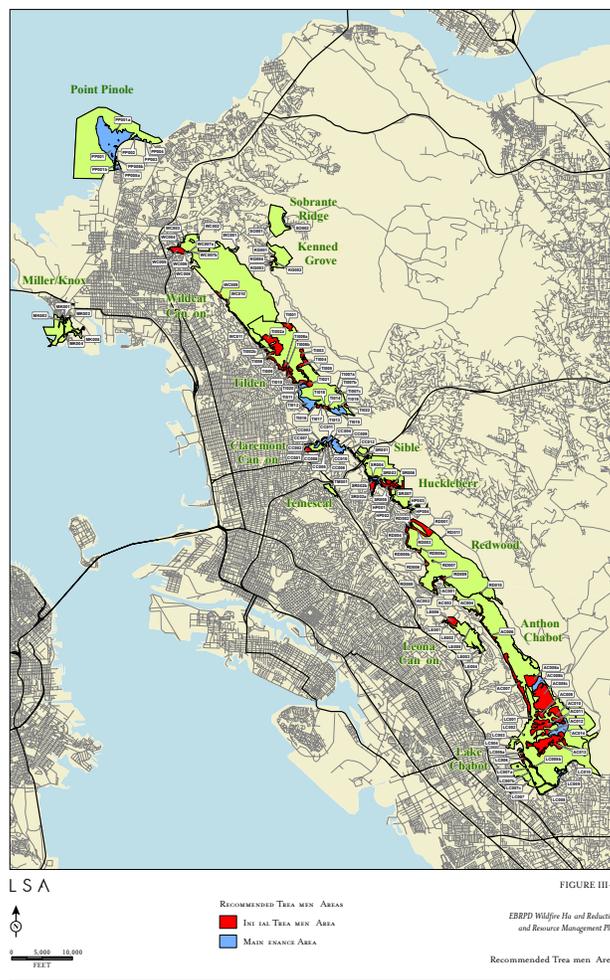


2.2.2. What to Protect - Values at Risk within the WUI

Factor 3 – Homes, businesses, critical infrastructure and other values to protect

Millions of people are exposed to the destructive forces of wildfire by virtue of living, working or visiting areas in the WUI. Much of what people value most highly – their lives, family, community, property, as well as cultural, economic and ecological interests is at risk of loss in an uncontrollable wildfire.

During planning meetings, area stakeholders identified homes, businesses, parklands and protected watersheds among values at risk. Regional roads are at risk, as are power and water supply facilities and substations, communications networks. Refineries and manufacturing areas, including railroads, are also at risk.



⁷ Source: <https://www.cpuc.ca.gov/firethreatmaps/> accessed 8/26/19

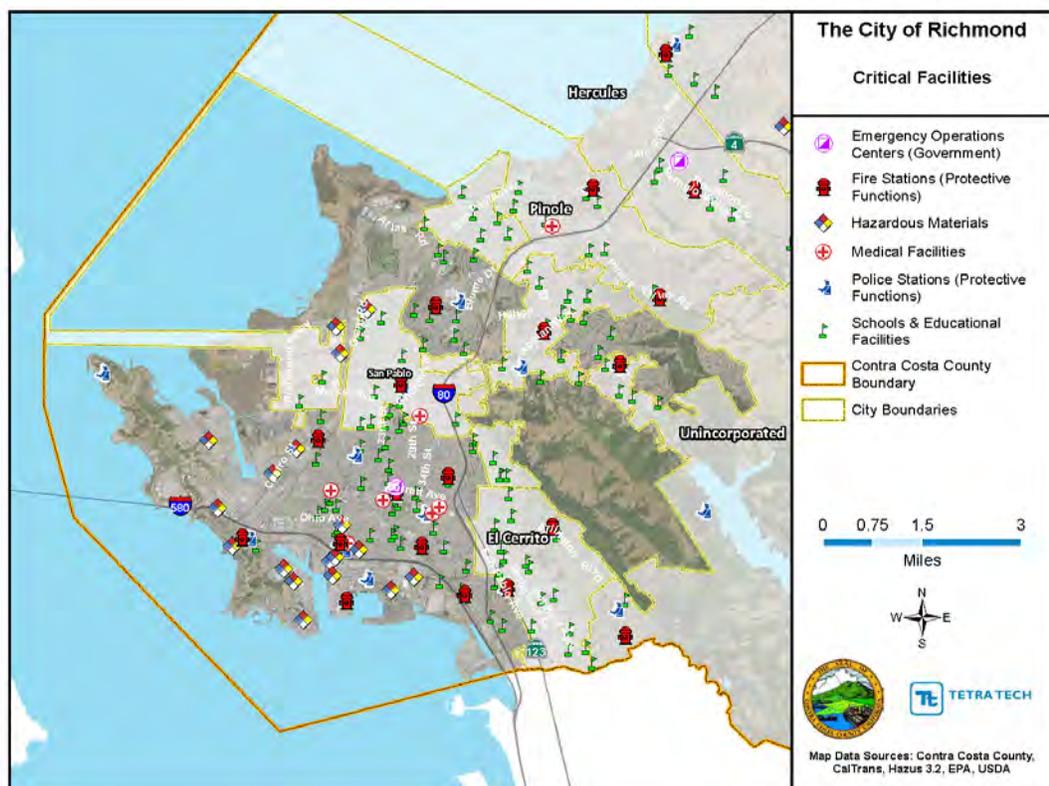
⁸ Source: https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/public-safety-power-shutoff-faq.page accessed 7/26/19.

⁹ Source; <https://www.ebparks.org/about/stewardship/fuelsplan/plan.htm> accessed 8/26/19

Map of Richmond Very High Fire Severity Zones (VHFSZ): The map of the current Richmond VHFSZ is included in Appendix A. During the planning process, stakeholders identified two additional areas to be considered for inclusion of map updates: the UC Berkeley Forest Products Lab and the Port of Richmond. Both these areas, in addition to Point Pinole, Point Molate, Point Richmond and Miller Knox, while not included on CAL FIRE maps do have potential for fire spread and difficulty of containment from fuel loads and vulnerable structures.

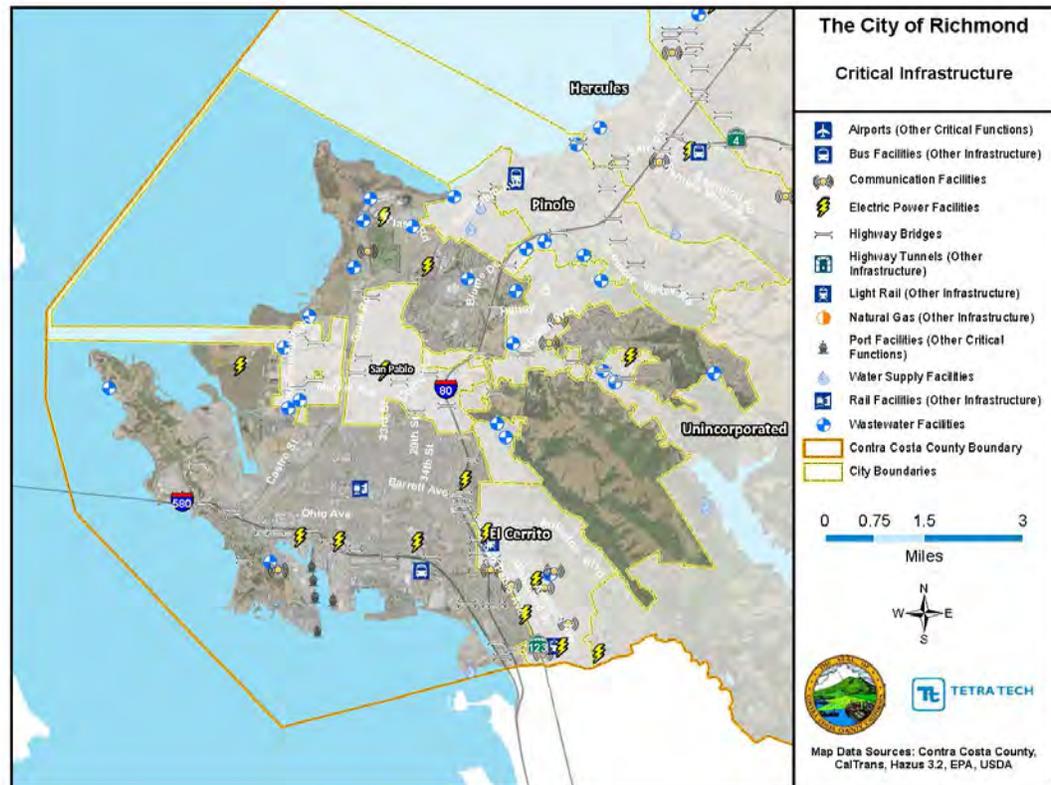
What to Protect: In addition to looking at fuel hazards, it is important to identify things that should be protected from the hazards. Some of the values at risk to protect include:

- Homes and businesses. The 2017 *American Community Survey 1-year estimates* census shows a population of 110,037 with 40,489 housing units in the City of Richmond. Approximately 2,067 people live in 553 housing units located in the very high fire hazard severity zone. The estimated total replacement value of buildings and contents is over \$300 billion.¹⁰ Of particular concern are those who for whatever reason would not be able to leave during an evacuation without assistance. Total monetary value of structures in the area is estimated at more than \$4.39 billion.¹¹
- Schools. Richmond includes 19 public elementary schools (including public pre-school), one middle school, four high school and 12 charter schools, as well as 10 private schools. In addition there are churches and other private facilities that operate pre-schools and day care.



¹⁰ Data from: Local Hazard Mitigation Plan Tables 13-3 and 13-4.

¹¹ Source: Based on average house value of \$495,400



- Other public facilities. There is one hospital or critical care facility in Richmond, but it is outside of the very high fire hazard severity zone. There are 12 residential care facilities located within the very high fire hazard severity zone. Other public facilities include: Richmond City Hall that serves as the command center during emergencies, fire stations, eight Community Centers, three Libraries, and one police station.
- Infrastructure. The PG&E high voltage transmission lines that cross east from the Valley View substation or through Kensington/ El Cerrito then north to the seven Richmond and multiple Standard Oil substations, are part of the national electric grid, as well as providing power to the region. Similarly, the water facilities operated by EBMUD are critical to the region, as well as for local water delivery. Telecommunication networks and public emergency communication systems also serve the region. A network of local roads maintained by the City of Richmond and Contra Costa County provide both emergency access and evacuation routes for residents. Many of these roads are narrow and steep, reflecting the topography.
- Other things to consider. Richmond is seismically active with nearby faults including the Hayward, San Andreas, and other related faults.¹² Seismic activity could impact access, reliability of water supply and result in potential ignitions from gas or fuel lines following an earthquake. The steep hillsides are also geologically unstable, with areas of slides located throughout the hills.

While fire is a natural and critical ecological process in much of California’s diverse terrestrial ecosystem, many existing “fire regimes” in the Richmond area have been drastically altered from their natural variability. Introduced species, fire suppression, disease and insect infestations, and fire suppression are just a few of the reasons why some ecosystems now experience fires that are more intense and damaging. Environmental impacts from wildfires include:

¹² Source: <https://earthquake.usgs.gov/hazards/qafaults/> Accessed 9/19/19.

- Damage to critical wildlife habitat.
- Damaged fisheries (increased water temperatures, sedimentation and water quality).
- Soil erosion from both wind and water erosion. Accelerated soil erosion can lead to landslides as well as threaten nearby aquatic habitats. Hot fires can also damage soil nutrients or make soil water repellent (hydrophobic).
- Disease and insect infestations as non-native plant species invade burned areas.

Critical wildlife habitat

US Fish and Wildlife Service has identified critical habitat for the Alameda Whipsnake and Red Legged Frog in the East Bay Regional Park lands adjacent to Richmond. Other federal listed species are identified in the “Best Management Practices Guidebook for Hazardous Fuels Treatments in Contra Costa County” and the *Vegetation Management Almanac for the East Bay Hills*. The Richmond General Plan 2030 identifies a number of special status plant and wildlife species. Several of these species have potential of occurring in very high hazard fire severity areas where fuel mitigation projects might be developed.¹³

Special Status Plant Species

Diablo helianthella
 Loma Prieta hoita
 Santa Cruz Tarplant
 alkali milk-vetch
 bent-flowered fiddleneck
 fragrant Fritillaria
 pallid manzanita
 soft bird’s beak
 western leatherwood

Special Status Wildlife Species

Alameda song sparrow
 San Pablo song sparrow
 San Pablo vole
 hoary bat
 monarch butterfly
 northern harrier
 pallid bat
 short-eared owl
 silver haired bat
 white-tailed kite

Local watersheds, creeks and riparian areas and the Green Infrastructure Plan

The City of Richmond has recognized the value of protecting their local watersheds, creeks and riparian areas and have local storm water management. The City's manages its own storm water program, and seeks to maintain a healthy aquatic environment by keeping pollutants out of the storm drain system, creeks, and the Bay. The program strives to reduce trash and pesticide use, engage residents, and educate businesses on practices to reduce or eliminate pollutants in water bodies.¹⁴ The City also has a green infrastructure plan to develop more resilient and sustainable storm water management.¹⁵ State regulatory agencies, including the California Department of Fish and Wildlife (CDFW) and the San Francisco Bay Regional Water Quality Control Board (SFRWQCB), oversee protection of riparian areas, including along seasonal or ephemeral channels, and issue permits required for removal of riparian vegetation. Replanting or revegetation may be required in some areas when vegetation is removed to reduce wildfire hazards.

¹³ Source: Source: Richmond General Plan 2030, adopted 2012. <http://www.ci.richmond.ca.us/2608/General-Plan-2030>. Conservation, Natural Resources and Open Space Element. Accessed 8/27/19. Note: Additional plants and wildlife associated with the Bay or wetlands are identified by not included here. See Page 1.5 for full list.

¹⁴ Source: <https://www.ci.richmond.ca.us/3281/Water-Resource-Recovery> Accessed 8/19/19.

¹⁵ Source: <http://www.ci.richmond.ca.us/3728/Green-Infrastructure-Plan> Accessed 8/19/19

Significant recreation, scenic areas and areas of historical, economic or cultural value

Richmond contains publicly owned open spaces with significant values related to recreation and scenic areas. The communities also contain areas of economic and cultural value both as documented historical and undocumented archeological sites.

Richmond’s open space lands include a broad range of areas such as: greenways, trails, easements, parks, plazas, common areas in residential developments, land use buffers, wetlands and riparian areas. Richmond enjoys approximately 5,718 acres of regional and state parklands located along the shoreline and in the East Bay hills including: Point Isabel Regional Shoreline, Wildcat Canyon Regional Park, Mille/Knox Regional Shoreline, Pinole Regional Shoreline, Brooks Island Regional Preserve and Sobrante Ridge Regional Preserve and East Shore State Park. The City manages more than 250 acres of City-owned urban parkland. Other open space uses in Richmond include grazing areas and the Rolling Hill Memorial Park and Cemetery.¹⁶ In addition to public open space, several of the neighborhoods in east Richmond have private open space, dedicated to the neighborhood as a condition of development.

Parks & Open Space in the Very High Fire Hazard Severity Zone

City Owned Properties

Alvarado Park
Lamoine Park
Raincloud Park

East Bay Regional Park District Properties

Miller Knox Regional Shoreline
Point Molate Beach Park
Point Pinole Regional Shoreline
Wildcat Canyon Regional Park
Sobrante Ridge Regional

Neighborhood Private Open Spaces

Carriage Hills North
Carriage Hills South
Castro Heights
El Sobrante Hills
Greenbriar
May Valley

Properties Owned by Others

Olinda School Field
Valley View School Field

Richmond actively protects its hills and ridges and associated natural features through a Hillside Ordinance.¹⁷ Many of Richmond’s native plants and wildlife, such as the Suisun Marsh Aster and the Monarch Butterfly, are designated as special status species that play an especially significant role in enriching natural areas and maintaining biodiversity. These special status biological communities are those that have been officially recognized by federal and state resource agencies. Additional habitats found in the area include, but are not limited to, oak and cottonwood woodlands, various grasslands and aquatic plants associated with open water and creeks.

Richmond’s historic resources are located throughout the City and offer a window into the community’s rich past. Historic resources include locally significant assets as well as state and nationally recognized landmarks, sites and districts. In addition, there are unofficial potential listings. Various locations are known to contain archaeological sites, including Ellis Landing shellmound and Stege Mounds Archaeological District. Throughout the City are also native and heritage trees, many of which are large specimens trees representing a significant aspect of Richmond’s history. The City recognizes substantial economic, environmental and aesthetic benefits from native and heritage trees and endeavors to preserve and protect them.

¹⁶ Source: Richmond General Plan 2030, adopted 2012. <http://www.ci.richmond.ca.us/2608/General-Plan-2030>. Conservation, Natural Resources and Open Space Element. Accessed 8/27/19.

¹⁷ Source: Hillside Subdivision Ordinance Section 15.04.201.100. https://www.ci.richmond.ca.us/DocumentCenter/View/41218/City-Zoning-and-Subdivision-Regulations_for-Print_rev?bidId= Accessed 8/27/19.

Planning and Building Services has the lead responsibility for historic resource inventory and protection of environmental resources. They will need to be consulted as fuel mitigation projects are developed so that the City's historic and environmental resources can be protected, both during hazard reduction activities and from potential wildfires.

2.2.3. Protection Capabilities

Factor 4 - Local Preparedness and Fire Fighting Capabilities

As identified in Section 1, Richmond Fire Department leverages their resources through participation in emergency management systems and the incident command systems. Preparedness and firefighting capabilities include community readiness and emergency personnel response. During fire incidents law enforcement, including the Richmond Police Department and the Contra Costa County Sheriff, is responsible for coordinating evacuation. Volunteer resources, such as Richmond CERT groups, regional ECHO, KARO and RACES, Contra Costa Medical Reserve Corps and Contra Costa County Office of the Sheriff Volunteers, also play critical roles in both preparedness and during response to wildfires.

The Richmond Fire Department Office of Emergency Services (OES) leads the City in comprehensive emergency management including planning and preparedness for, response and recovery from, and mitigation of natural, manmade, and accidental incidents of high consequence. OES works with neighboring agencies, including agencies across the county and the state to share plans, explore best practices and develop collaborative relationships to ensure the most effective and efficient response and recovery efforts.

City of Richmond uses three key ways to communicate important, time sensitive information to the community.

- Nixle is an "opt in" method that uses text and/or email notifications. These notifications can include everything from critical alerts such as health and safety issues, hazardous materials releases, Shelter-in-Place orders, evacuations and road closures. Notifications can be designated "alert" or advisory." The information subscribers receive varies depending upon the preferences specified.¹⁸
- Community Warning System (CWS) (sirens and alerts) is an all-hazard public warning system managed through a partnership including the Contra Costa County Office of the Sheriff and others. They use both outdoor sirens and alerts to notify residents of possible hazards. Sirens are located so they can be heard throughout Richmond. Residents register for alerts by text, voice and emails. They can register their mobile devices as well as land lines. Contra Costa Community Warning System (CoCoCWS) also has a web presence and is on Facebook, Twitter, and WhatsApp.¹⁹
- Social media platforms are also used to communicate with the community. Facebook, Nextdoor and Twitter provide both regular safety communications, as well as information during periods of heightened alert.

2.3 Strategies for Reducing Risk within the WUI

Wildfire is a natural process in the regional ecosystem. The natural hazards of the fire environment – weather, climate, topography and fire adaptive vegetation – all are immutable. Attention to decreasing the human impacts and risk factors can reduce the incidence of

¹⁸ Source: <https://www.ci.richmond.ca.us/3625/Nixle-Emergency-Notifications> Accessed 9/13/19.

¹⁹ Source: <https://cwsalerts.com/about/> Accessed 9/13/19.

catastrophic wildfire and increase the community's resilience should a wildfire occur. The following potential strategies were developed with the planning stakeholders for reducing risk are organized to focus on each of the existing risk and hazard assessments:

1. Collaborative Partners

Identifying and working with collaborative partners lays the groundwork for other strategies to reduce the risk of fire. Partners may include:

- Neighborhood groups including: East Richmond, Point Richmond, HOAs (Carriage Hills 1 & 2), May Valley) (potential FIREWISE communities).
- Community interest groups and non-profits: Richmond Groundworks, Urban Forest Advisory Committee, Richmond Trees, Urban Tilth, Bay Trail, hiking groups (e.g. El Cerrito Trail Trekkers). Plus Richmond Recreation and Parks Commission presentations to reach a wider audience.
- School District.
- East Bay Regional Park District.
- CERT groups.
- Neighborhood watch groups (Richmond Police Department coordinators).
- City of San Pablo.
- Contra Costa College.
- Industry (Chevron, Pt. Molate Terminal 4, railroads, Port of Richmond), cell tower owners (on Nicholl Knob and Hilltop).
- Large right of way owners, including power and transport (PG&E, Kinder Morgan).
- Chamber of Commerce (businesses).
- Sanitation groups and other utilities (with field crews as eyes on ground).
- Contra Costa County (Fire District, Office of Sheriff, Development and Conservation), including jail facilities, unincorporated county areas.
- East Bay Municipal Utility District (EBMUD).

Collaborative partner activities may include: sharing ideas and cross messaging to reach more diverse audiences, education and outreach programs, collaborative planning on a local level with more detailed assessments and project development. This could also include identifying friends and volunteer groups for project work and facilitating roles for residents.

Collaborative partner activities could focus on sharing best practices related to wildfire prevention, hazardous fuel reduction, natural resource conservation and stewardship. They also could be used to develop policy, such as for planting restrictions or removal of highly flammable plant species.

Electronic distribution allows for customization and distribution through existing partners networks. Communicating fire safety messages year-round, and identifying and facilitating roles for residents working with agencies could foster collaborative partnerships.

2. Recommendations to address risk of ignitions

Stakeholders identified a number of challenging ignition sources in Richmond including: roadside ignitions (especially where there are limited evacuation options), homeless encampments, pipelines transporting hazardous and flammable materials, railroads (BNSF and UP), PG&E transmission lines, distribution lines and substations, fireworks, pistol and rifle

range, industry failures from both large and small plants (e.g. junk yards, commercial composting), blast zones, high-speed roadways (I-80 and I-580) for public and commercial use (including transportation of hazardous materials), permitted and unpermitted construction, aviation, ATVs in open space, trail hikers and cigarettes.

Strategies to target key causes of ignitions include:

- Ignition Prevention Education –Available ignition campaigns include “One Less Spark,” fire department staff outreach, mowing guidelines and drought related information.
- Enforcement (restrict certain activities): support consumer fireworks exclusions (including sky lanterns), fire investigations and working with law enforcement and defensible space inspections/ enforcement. Limit access or activities during periods of high fire danger (red flag warnings). Increase staffing levels and patrols on red flag days. Develop new policy and associated enforcement, such as for planting restrictions or removal of highly flammable plant species.
- Engineering – equipment safety, fuel reduction activities. This could include roadside clearance of vegetation or a juniper removal campaign. Or projects focused on areas of high tree mortality due to drought, disease or pest where there may be higher potential for ignition. It could also include early detection cameras or other devices to allow for rapid response should an ignition occur.

3. Recommendations to address fire weather

Richmond does not have an official program for fire weather (periods of extreme high fire danger). However, Richmond fire stations have and fly “red flags.” Additional potential recommendations include:

- Red Flags at other public facilities. Include fire danger level signs in neighborhoods (businesses funded).
- Stop work requirements added to encroachment permits and building permits. Requirements to stop hot work several hours before crews leave a site to be able to detect any smoldering materials that could potentially ignite later.
- Protocols for some departments (agencies) to staff up on red flag days.
- Map system that allows contractors to view restrictions for specific areas.
- PG&E public safety power shut offs (PSPS).
- Local media alerts during red flag weather. Additional partners can get the word out over a variety of communication systems (newsletters, Nixel, websites, Contra Costa County Community Warning System emergency alerts, etc.). Shared responsibility – patrols, community watch type activities.

4. Recommendations to address community at risk hazards

Stakeholders identified many community risk factors and hazards including: powerlines, areas at the end of water service lines with the potential for reduced pressure and smaller line sizes, encroachments into road rights of way (parking, plant materials etc.) that restrict ability for access and egress, and private roads that are not maintained. In some neighborhoods there are private open spaces created through deed restrictions during community development (e.g. El Sobrante and May Valley areas). Potential recommendations include:

- Restrictions of parking in areas on certain days.
- WUI packet for developers with new development (City of Brea has one example).

- Open space fuel reduction projects.
- Requirement for clear travel lands with no parking or other restrictions.
- Community chipper days and programs offering neighborhood assistance for seniors.
- New requirements for access (identify streets with access/ evacuation issues).
- Standards, incentives and enforcement of management to reduce fuel loads.

5. Recommendations to further support defensible space programs

- Seniors and those on fixed income often need help to create defensible space around their homes (Special Needs Assistance Program SNAP).
- Assistance with disposal of cut materials (trees and brush) through green bins, chipping programs, annual public service pickup.
- Volunteer groups working on vegetation removal (e.g. pulling broom – an existing group in Pt Molate is a potential model).
- “Plant native” or creek/ watershed groups as potential models.
- Inspection programs –process to notify, identify violations, enforcement, abatement of non-compliant properties and reimbursement of re-inspection/ contractor costs.
- Process to address bank or City owned properties that are non-compliant.
- Offer courtesy inspections for education and to increase awareness.
- Ability to adjust compliance dates as needed due to longer growing season/ late rains.
- Notifications sent to both renter (education) and property owner (legal notice for compliance).

6. Recommendations to support improving structure survivability

- There are only a small number of homes that meet the 7A building code for wildfire resistant construction (newer homes) in Richmond. All new development on Point Molate will be required to meet this code.
- “Firewise” assessments can offer opportunity for and education of homeowners about their home’s vulnerabilities.
- Education program to share best practices for retrofit of existing structures. Note: Richmond has a lot of older homes where the electrical wiring is still “knob and tube”. These homes are located all over the city, not just in high fire hazard areas. A program would need to determine what areas are eligible based on funding sources.
- Requirement for fire sprinklers in new homes or if more than 50% of home is remodeled. Specific requirements for ancillary dwelling units (ADUs or “granny units”) related to main structure >1,200 square feet.
- EBMUD water service requirements for new services or upgrades.
- Process to address hoarder houses (requires teams of fire, police, code enforcement and social services).
- Access to gated homes through Knox box or other key access.

7. New and Infill Development

- Chapter 7A building code (or CA Residential Code 337) in effect for all new construction in the high fire area – both individual homes and new developments such as the Quarry Project or Pt Molate.
 - Concern that wildfire safety requirements are clear before contracts are signed.
 - Issue “conditions of development” permits at the Master Plan level before parcels are sold to smaller builders or homeowners.
 - Deed restrictions for individual properties.
 - Mechanisms to fund management of open spaces in perpetuity.
- Standard road width of 26’ wide, plus a 10 foot clear zone for ingress/ egress.

8. Recommendations to support fuel management on public and large scale private lands

- Currently the City requires fuel management along the property perimeter and near structures.
- Require management of hazardous vegetation in private community open spaces to reduce ignition, slow fire spread and support containment of potential wildfires.
- Use of available fuels reduction hand crews – CAL FIRE and CA Department of Corrections.
- Use of other fuel management techniques such as goats or machines (masticators).

9. Recommendations for protecting homes, businesses, other facilities & essential infrastructure at risk

Challenges identified related to above ground powerlines and aged neighborhoods with narrow roads.

- Identify infrastructure to protect: roads, power grid, water treatment facilities, communications and utilities. Support hazardous fuel reduction projects, such as those on watersheds, roadside clearances and power-line clearance. It was also noted that not all facilities are connected to the PG&E electric grid (e.g. Chevron) and may not be included in PG&E public safety power shut offs.
- Identify network of roads for fire response and resident evacuation.
- Water for fire fighting, including public and private sources.
- Provide extra patrols during high fire (Red Flag) days.

10. Recommendations to support Local Preparedness and Firefighting Capability

- Evacuation plans for neighborhoods. Develop local evacuation plans and educate residents on preparedness, including special needs communities and animal rescue and sheltering. Recognize parking on narrow roads further limits fire access and evacuation.
- Red flag day notifications and community awareness of what to do.
- Projects to identify and resolve choke points on roads (e.g. vegetation, parked cars).
- Support local volunteers and community readiness with multilingual programs. Participate in and enhance existing CERT/ Neighborhood Watch programs. Ready Set Go. FIREWISE. Incentivize/ require City Staff to participate in CERT and other local programs.
- Continue to support fire department response improvements: expanded mutual aid, wildland fire training, equipment, etc. Coordination between agencies and land managers.
- Continue to support public notifications systems –community warning sirens, CWS, Nixel, etc.

Recommended Action Plan

3.1 Selection of Recommended Priorities

The Richmond Community Wildfire Protection Plan (CWPP) was developed through collaboration of stakeholders and residents that attended work sessions, public presentations or commented on draft versions of this plan. Participants were invited to submit project ideas that provide protection and reduce risk. The following recommended priorities are based on this collaboration, as well as the Countywide CWPP, analysis and the recommended strategies for reducing the risk with the WUI detailed in Sections 1 and 2.

Sections 3, 4 and 5 of this Richmond CWPP offer specific "Priority Action" recommendations and associated implementation actions. It is anticipated that additional opportunities for actions will be identified as the CWPP is implemented. Projects, workshops, demonstrations and education efforts will be recommended for implementation and funding based on the following attributes:

- Protects life, property and infrastructure in areas of Richmond and adjacent unincorporated neighborhoods where risk of catastrophic wildfire is most severe.
- Protects vulnerable populations.
- Reduces risk of fire spreading between private lands to public lands (regional parklands, or watershed lands) or areas where significant natural or cultural resources are at risk.
- Seeks to create a detailed implementation plan for fire prevention or mitigation at the local level in an area identified as "at risk".
- Involves stakeholders at all levels, which is to say there is strong community support, as well as support from applicable agencies and landowners. Intensity of local support will be a significant factor when choosing projects.
- Demonstrates the capacity to continue to manage and maintain the project effectively, and/or supports ongoing, previously planned efforts.
- Projects that will improve firefighting response, wildfire control capabilities and residential evacuation plans and operational programs.
- Accomplishes multiple City goals.
- Removal of invasive plants of known high flammability listed in a recognized source (Cal-IPC California Invasive Plant Inventory [https://www.cal-ipc.org/plants/inventory/.](https://www.cal-ipc.org/plants/inventory/))

Many of the recommended actions will take long-term commitment over multiple years to address the complex hazards. Some actions have current funding, but additional funding and efforts are needed to continue to address the issue. Stakeholders discussed the need to prioritize in a tactical way where to work first. They recommended using Richmond's Tree City recognition program as a model, following its four standards to create a Richmond Firewise City program:

1. Identification of Board or Department legally responsible for the decision.
2. A standard of care identifying best management practices
3. A program with an annual budget
4. Recognition (annual observance and proclamation of a program).

Two national wildfire programs, FIREWISE and Ready, Set, Go!¹, offer potential guidelines and standards for consideration as Richmond shapes it’s own program. Development of a Richmond Firewise City recognition program could be a first step toward implementing the identified priorities.

There is also a need to track the plan and monitor progress, such as by using Richmond’s Open Data Portal. For example, the Richmond Firewise City program could show statistics of community and staff members have received CPR, CERT Training etc. to increase preparedness. The summary table below translates the four identified priority actions and provides 18 strategies for implementation. Preliminary recommendations for 36 actions are discussed in the following sections under each priority. The Richmond Firewise City program should further refine specific actions, responsibility, metrics for success and budget.

Summary of Priorities and Strategies



Priority 1 – Fire Prevention Education Program Support year-round community efforts with multi-lingual education programs regarding wildfire safety and ignition prevention.	
Strategy ED1	Identify education needs (various audiences and language spoken)
Strategy ED2	Develop information on specific fire prevention topics.
Strategy ED3	Provide “give-away” items for low-income families to improve wildfire safety.
Strategy ED4	Utilize a range of delivery methods to encourage resident participation.
Priority 2 – Evacuation Planning and Preparedness Collaborate with agency and community partners to develop neighborhood evacuation plans so residents know what to do in the event of a wildfire.	
Strategy EV1	Build regional collaboration around evacuation planning and preparedness.
Strategy EV2	Focus on community groups, neighborhood and block level with preparedness activities.
Strategy EV3	Identify primary and secondary evacuation routes and needed improvements.
Strategy EV4	Pre-designate suitable evacuation shelters and needed improvements.
Priority 3 – Defensible Space Programs Expand defensible space programs (fuel reduction around homes) for property owners in high fire hazard areas in Richmond.	
Strategy DS1	Expand defensible space awareness and education.
Strategy DS2	Support defensible space inspections, enforcement and abatement programs.
Strategy DS3	Provide support programs as incentives for homeowners to create defensible space.
Strategy DS4	Work with owners of large parcels and community open space to develop and implement hazardous fuel management strategies.
Strategy DS5	Manage city owned undeveloped parcels and open spaces to meet the same defensible space inspection requirements as for private properties.
Strategy DS6	Identify wildfire hazard trees and trees susceptible to climate change, pest and disease) on the Tree City inventory for maintenance and long-term management.
Strategy DS7	Showcase successful treatments of private and public properties.
Priority 4 – Home Hardening Develop education and training related to retrofit of existing homes and structures to improve their survivability (home hardening).	
Strategy HH1	Identify what can be done without major remodel and evaluate new technologies, materials and products.
Strategy HH2	Education and training for homeowners to make their home ignition resistant.
Strategy HH3	Develop dissemination and delivery methods, including building permit counters.

¹ For additional information see: <https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA/Become-a-Firewise-USA-site> and <https://www.wildlandfirersq.org/> accessed 9/24/19

3.2 Information, Education and Collaborative Planning Priorities

Education is viewed as a force multiplier and stakeholders felt it should inform residents and businesses about a number of topics, such as risk of ignitions, fire weather and defensible space. A key recommendation is working with potential partners to find common ground, share ideas and develop joint implementation of local projects. These partners may expand beyond the traditional agency partners to include volunteer groups who have interest in neighborhood or nearby open spaces. They may also include organizations, such as: the Richmond Groundworks, Urban Forest Advisory Committee, Richmond Trees, Urban Tilth, YES-Nature to Neighborhoods, offices of the mayor or elected officials, homeowner associations, West Contra Costa Unified School District, Contra Costa College or local businesses including 23rd Street Merchants association, Main Street initiatives, Richmond Community Foundation, Rich City Rides and Latina Center.

Priority Action 1: Fire Prevention Education Program

Recommendation: Support year-round community efforts with educational programs regarding wildfire safety and ignition prevention. These should identify inexpensive things a homeowner, business owners, contractors and others can do.

Strategies and Implementation Actions:

- Strategy ED1 - Identify education needs
 - Action ED1.1. Identify various audiences (e.g. residents, contractors, special interest groups) and languages spoken. Identify the needs of residents or businesses versus special interest or recreational users.
- Strategy ED2 - Develop public information on specific fire prevention topics.
 - Action ED2.1. Develop education information on fire weather – “red flag” program and what to do and not do during periods of high fire danger.
 - Action ED2.2. Develop education information on ignition sources and how to prevent a wildfire from starting.
 - Action ED2.3. Develop education information on how structure can ignite (e.g., the ignition chain of how a wildfire or adjacent house fire can be transmitted through the landscape or house to house).
 - Action ED2.4. Develop education information on importance of neighborhood defensible space, especially critical on dead end streets or where homes are close together. Richmond Fire personnel should make this information available before inspections.
 - Action ED2.5. Develop education information on general awareness (e.g. wildfire hazards, fuel loads, red flag days).
 - Action ED2.6. Develop education information on demonstration projects (see Section 4 Priority Action 4 Defensible Space Program).
 - Action ED2.7. Develop education information on how to identify, develop and fund a hazardous fuel reduction project.
- Strategy ED3 - Provide “give away” items for low income families to improve wildfire safety.
 - Action ED3.1. Obtain “give-away” items for low income families (e.g. solar powered light/ charger, CERT packet with helpful emergency signs, etc.)
 - Action ED3.2. Expand education program to include “give away items.
- Strategy ED4 - Utilize a range of delivery methods to encourage resident participation.

- Action ED4.1 Distribute wildfire safety and ignition prevention information via direct mail, information on existing electronic/ social networks (Facebook (sponsored ads, Nextdoor), city calendar, City Manager’s weekly, county, city and community list serves, open houses at Fire Stations and other community events.

Lead and Partners: Richmond Fire Department, Diablo Fire Safe Council and partner city departments, adjacent cities and agencies.

Time frame: Short-term timeframe. On-going year round program.

Estimated Funding Need: \$ to \$\$ development/ distribution of materials (paid advertising and giveaway items) and evaluate additional needs.

3.3 Enhanced Suppression Capability and Emergency Preparedness Priorities

Each year wildfires reinforce the importance of local emergency preparedness and evacuation plans. The emergency service agencies (Richmond Fire Office of Emergency Services, Richmond Police, County Sheriff, and the various adjacent fire departments) are interconnected through mutual aid agreements and common training of the Incident Command System and National Incident Management System. To expand this preparedness to a local and neighborhood level, there is the Richmond Citizen Emergency Response Training (CERT). Priority Two focuses on assisting in the development of neighborhood evacuation plans. Another opportunity is to collaborate with future updates to local hazard mitigation plan or general plan safety elements.



Download at

[https://www.cccfpd.org/pdfs/Residents Wildland Fire Guide, County Version -- FINAL -- 7-16-19.pdf](https://www.cccfpd.org/pdfs/Residents%20Wildland%20Fire%20Guide,%20County%20Version%20--%20FINAL%20--%207-16-19.pdf)

Priority Action 2: Evacuation Planning and Preparedness

Recommendation: Collaborate with agency and community partners (CERT, Neighborhood Watch, Red Cross) to assist neighborhood groups in developing neighborhood evacuation plans so residents know what to do in the event of a wildfire.

Strategies and Implementation Actions:

- Strategy EV1 - Build regional collaboration around evacuation planning and preparedness.
 - Action EV1.1. Coordinate with regional and local planning efforts through fire, law enforcement agencies, Contra Costa Operation Area members, Cal Trans, public works agencies and others ((e.g. Red Cross, CERT, and Neighborhood Watch).
 - Action EV1.2. City to encourage/require CPR, AED and CERT training (including for all City staff) to be able to report and assist during emergencies.
 - Action EV1.3. Coordinate collaboration with general education program of wildland urban interface issues (see Strategy ED2: red flag warnings, “Ready Set Go!” and warning systems such as Weather Radio, Nixel and Community Warning System).
- Strategy EV2 - Focus on community groups, neighborhood and block level with preparedness activities.
 - Action EV2.1. Get residents to sign up for CWS (+Nixel or other systems) and monitor for red flag warnings. Support early detection and decision support systems.
 - Action EV2.2. Explain community evacuation procedures and develop appropriate expectations about access/ egress, parking, evacuation routes, role of police and sheriff, notifications etc. Reinforce understanding that law enforcement is in charge of the evacuation.

- Action EV2.3. Identify essential supplies to maintain (Go Pack).
- Action EV 2.4. Identify people with access and functional needs at the block level (such as with the “map my neighborhood” program).
- Strategy EV3 - Identify primary and secondary evacuation routes.
 - Action EV3.1. Collaborate with City Departments and adjacent agencies (see Strategy EV1) to identify and preplan primary and secondary evacuation routes in response to likely wildfire scenarios. Communicate findings through Strategy ED4 and EV2.
 - Action EV3.2. Identify and implement physical improvements to the routes as needed (shoulders, parking restrictions, vegetation clearance, signage etc.).
- Strategy EV4 - Pre-designate suitable evacuation shelters
 - Action EV4.1. Identify facilities suitable for evacuation shelters (e.g. community centers, fire stations, corporation yards etc.) or temporary refuge areas.
 - Action EV4.2. Support as part of a citywide effort the retrofit of emergency shelters as needed (e.g. solar photovoltaic and storage systems, HVAC, roof and energy upgrades etc.) so buildings are safe and functional during an emergency and the recovery periods.

Lead and Partners: Richmond Fire and OES to coordinate with adjacent agencies’ fire departments, police departments, as well as other groups that address evacuation training such as CERT and Red Cross. Outreach to homeowner associations, general public to develop community ambassadors.

Time frame: Short to identify, medium to long term to implement improvements.

Estimated Funding Need: \$ for maps and brochures; \$\$\$\$ for physical improvements.

Prioritizing Hazardous Fuel Reduction Treatments

4.1 Hazardous Fuel Management

Hazardous fuel management, ideally a subset of sound vegetation and ecosystem management, is the practice of removing or modifying vegetation in order to reduce wildfire ignitions, rate of spread and intensity. Fuel management requirements depend on the vegetation type, location, condition and configuration. Given the dynamic nature of the fuels in Richmond, a single treatment type or prescription is not effective. Follow up is often needed to avoid encroachment by weedy, non-native invasive species. Rigorous oversight, active management and an adaptive approach are required to achieve fuel management goals with a positive by-product of sustainable ecosystem.

Generally five fuel management methods are available and used within the WUI:

- Manual (hand labor such as pulling or cutting)
- Mechanical treatment (equipment used for mowing, selective cutting of trees, masticating or crushing)
- Prescribed herbivory (targeted grazing by sheep, goats or cattle)
- Chemical treatment
- Prescribed fire

Specific fuel management treatment goals and methods are addressed more fully in the *Best Management Practices Guidebook for Hazardous Fuel Treatments in Contra Costa County* the *Vegetation Almanac for the East Bay Hills*. These best management practice guidebooks will continue to be refined based on environmental compliance documents, adaptive management practices and other lessons learned by the various stakeholders.

The sustainability of fuel management is an on-going challenge at all landscape scales – from the single residence, neighborhoods, private community open space, public open space, watershed and parklands. Existing residential areas typically depend upon private property owners and their fire agency’s fire prevention programs to reduce fuel loads. The Richmond Fire Department has the ability to enforce compliance with local fire codes. However, they are limited by the extent of existing local adopted codes and potential new codes. Any new or in-fill residential development needs not only a plan for fire hazard reduction, but also funding mechanisms for long term vegetation management of any commonly held open space. Funding must include not only initial treatments, but also on-going maintenance on an annual or multi-year cycle.

4.2 Fuel Reduction Treatments – Geographically Based Projects

Throughout Contra Costa County public agencies, private owners, and fire districts establish hazardous fuel reduction treatment priorities on a regular basis as a part of their long-range planning or annual budgeting procedures. Many of the public land managers who manage lands within and adjacent to Richmond have detailed plans that incorporate fuel reduction treatments. Regionally such plans have not only identified geographically based projects,

but also have developed best management practices and mitigation measures that should be incorporated into projects to reduce the impact of fuel reduction treatments on the environment. Two such documents that offer guidance to Richmond are:

- *East Bay Hills Wildfire Hazard Reduction and Resource Management Plan and EIR.* East Bay Regional Park District.
- *East Bay Watershed Management Plan.* East Bay Municipal Utilities District.

Typically, fuel treatment is done around structures, by roadways and in areas of extreme fire behavior. Treatments addressed in the *Best Management Practices Guidebook for Hazardous Fuel Treatments in Contra Costa County*¹ are organized by zone as follows:

- From the Home: 0-30', 30-100'
- Critical Infrastructure: 0-300'
- Emergency Access Roads: 0-30', 30-100'
- Community Protection: 100-300'
- Community Wildland Interface: 1.5-mile area around a community unless otherwise designated.



Regionally, stakeholders in Contra Costa County have further refined this list with the following areas as appropriate for fuel management, which is supported in this Richmond CWPP:

- Areas within 200 feet of homes in the wildland urban interface (WUI) with excessively flammable vegetation that would produce greater than 8-foot flame lengths.
- Areas within 200 feet of high-value or irreplaceable public facilities in the WUI with excessively flammable vegetation that would produce greater than 8-foot flame lengths.
- Areas within 100 feet of private residences in the WUI with excessively flammable vegetation that would exceed state or local defensible space codes.
- Areas with excessively flammable vegetation due to extreme amounts of litter or ground fuel levels. These may be areas where ground fuels exceed six-inches deep with occasional jackpots of fine material up to three-inch diameter. It may be with greater than two to six tons per acre with ribbon bark and understory fuel ladders in identified high risk forest like eucalyptus or Monterey pine that are subject to torching and crown fires with potential high ember flight rates into residential areas.
- Areas critical to strategic fire fighting operations in the event of a wildfire with excessively flammable vegetation.
- Areas with excessively flammable vegetation within 30 feet of wildfire evacuation and fire fighting access along paved roads and strategic fire trails.
- Areas of invasive plants that will increase the



¹ *Best Management Practices Guidebook for Hazardous Fuel Treatments in Contra Costa County* (page 7). Available at www.diablofiresafe.org/publications.html#BMP

flammability of adjacent natural plant communities or displace more fire safe and fire adapted native species.

The list of current geographically based priority projects follows at the end of this section. An intended outcome of the Richmond CWPP is for this list to be updated bi-annually to ensure that efforts are coordinated whenever possible. Past hazardous fuel reduction projects have included working on public lands, with special interest groups and small groups of homeowners on private property including:

- East Bay Regional Park District hazardous fuel reduction projects in Point Pinole and Wildcat Canyon Regional Parks adjacent to Richmond.
- Chipping program with homeowners of McBryde Avenue, East Richmond Heights.
- Dimm Way hazardous fuel reduction project, East Richmond Heights
- Bernard Avenue neighbors fuel reduction projects, East Richmond Heights.

When funding is available, fuel reduction treatment projects with the following attributes should be given the highest priority:

- Project reduces hazardous fuels that, if left untreated, would generate high intensity burning adjacent to structures or communities at risk, or produce large quantities of airborne burning embers that would carry into communities or other important resources.
- Project reduces hazards along strategic emergency access and evacuation routes, or other critical infrastructure.
- Project includes vegetation modification treatments that will reduce the threat of unacceptable impacts of high intensity fire to high value ecosystems, sensitive watersheds and high concentration recreation areas, including regional parklands or state lands. Projects to include strategies and funding for on-going maintenance, especially follow-up management of non-native invasive species that could create hazardous fire conditions.

4.3 Fuel Reduction Treatments – Related Priorities

In addition to geographically based projects, the stakeholders reinforced the need for a link between education and fuel reduction projects. Wildfire safety requires a partnership between homeowners and agencies, as well as an understanding of what we are trying to achieve if we implement the wildfire safety program or fuel reduction projects.

Priority Action 3: Defensible Space Programs (Fuel reduction around homes)

Recommendation: Expand defensible space programs for property owners in high fire hazard areas in Richmond.

- Strategies and Implementation Actions:
 - Strategy DS1 - Expand defensible space awareness and education efforts.
 - Incorporate in Strategy ED1 action items.
 - Strategy DS2 - Support defensible space inspections, enforcement and abatement programs.
 - Action Item DS2.1. Develop and fund an annual defensible space inspection program on private property in the Richmond High Fire Severity Area.
 - Action Item DS2.2. Provide training for inspections.
 - Action Item DS2.3. Provide enforcement and abatement for properties not complying with hazardous vegetation standards.
 - Strategy DS3 - Provide support programs as incentives for homeowners to create defensible space.
 - Action Item DS3.1. Develop and fund cost share partnerships, SNAP (special need assistance program for people with access and functional needs), or chipping programs.
 - Strategy DS4 - Work with owners of large parcels and community open space to develop and implement hazardous fuel management strategies.
 - Action Item DS4.1. Identify property owners and homeowner associations with large parcels and community open space and notify them of vegetation management standards.
 - Action Item DS4.2. Work with property owners and homeowner associations to develop and implement hazardous fuel management strategies to provide defensible space for their own and adjacent properties.
 - Strategy DS5 - Manage city owned undeveloped parcels and open spaces to meet the same defensible space inspection requirements as for private properties.
 - Action Item DS5.1. Identify city owned undeveloped parcels and open spaces that are adjacent to homes.
 - Action Item DS5.2. Review for fire hazard reduction and develop method for on-going maintenance and long-term management to meet the same defensible space inspection requirements as for private properties.
 - Strategy DS6 - Identify wildfire hazard trees and trees susceptible to climate change, pest and disease) on the Tree City inventory for maintenance and long-term management.
 - Action Item DS6.1. Identify “wildfire hazard trees” (e.g. highly flammable species such as eucalyptus, pine and palms) and trees susceptible to climate change, pest and disease (causing increased tree mortality) on the Tree City inventory.

- Action Item DS6.2. Develop maintenance and long-term management for “wildfire hazard trees.”
- Strategy DS6 - Showcase successful treatments of private and public properties.
 - Action item DS6.2. Showcase successful treatments of private and public properties for reducing potential for ignition and spread of wildfire.
 - Action item DS6.2. Look at successful examples in other communities where multiple goals have been met with fuel reduction (defensible space) including: habitat values, beautification, creek restoration, invasive species removal, sustainability, etc.

Lead and Partners: Richmond Fire Department, Diablo Fire Safe Council and partner departments and agencies.

Time frame: On-going

Estimated Funding Need: \$ for outreach materials; \$\$\$\$\$ for implementation.

4.4 Environmental Review and Permitting

The Richmond CWPP, an Appendix to the Contra Costa Countywide CWPP, is an advisory document. The Plan was prepared in collaboration with public agencies and other interested stakeholders pursuant to the Healthy Forests Restoration Act. The committee was composed of stakeholders (or their representatives) living in at-risk communities, and the contents of this CWPP are opinions of these stakeholders following the procedures outlined in The Wildland Fire Leadership Council's handbook, *“Preparing a Community Wildfire Protection Plan, A Handbook for Wildland Urban Interface Communities.”* More specifically, landscape and fire science discussions, WUI designation, priority of at-risk communities, regulatory interpretation and other discussions set forth in this Plan are findings and recommendations by these stakeholders to help protect their communities from wildfires. Because this Plan is an advisory document, the Plan does not legally commit the City of Richmond to a specific course of action or conduct and thus, is not a project subject to CEQA or NEPA. At least twelve cities and counties in California have signed CWPPs without considering the CWPP as a project subject to CEQA.

However, if and once funding is received from local, state or federal agencies and prior to work performed, or prior to issuance of discretionary permits or other entitlements by any public agencies to which CEQA or NEPA may apply, the lead agency must consider whether the proposed activity is a project under CEQA or NEPA. If the lead agency makes a determination that the proposed activity is a project subject to CEQA or NEPA, the lead agency must perform environmental review.

In addition to NEPA or CEQA, it is recognized there are a number of permits that may need to be obtained prior to fuel reduction work including:

- US Army Corps of Engineers: Clean Water Act Section 404 or Rivers and Harbors Act Section 10 Nationwide Permit or Individual Permit.
- US Fish and Wildlife Service or National Marine Fisheries Service: Section 7 or Section 10 Consultation.
- Regional Water Quality Control Board: Clean Water Act Section 401 or Porter Cologne Act 401 Certification or Water Discharge Requirement.

- California Department of Fish and Game: Section 1600 Streambed Alteration Agreement; Fish and Game Code and California Endangered Species Act Streambed Alteration Agreement, CESA 2081 or CESA 2080.1 Permit.

Other activities may not require specific agency permits, but may require additional review or specific mitigation measures to comply with:

- Migratory Bird Treaty Act.
- National Historic Preservation Act (Advisory Council on Historic Preservation Section 106 review; State Historic Preservation Office).
- Bay Area Air Quality Management District Regulation 5. Open Burning.
- County Agricultural Commission, CAL EPA and Federal EPA on use of herbicides.
- Local tree ordinances.
- Local stream protection regulations.
- Local noise ordinances.
- City or county road encroachment

2019 Geographically Based Priority Hazardous Fuel Reduction Projects and Prevention Strategies

Agency or Group	Project or Strategy	Status
CAL FIRE Santa Clara Ranger Unit	Technical support and personnel to allied agencies who are conducting projects in the SRA and LRA of Contra Costa County. See Unit Plan Santa Clara County. Richmond is located in Battalion 4.	Ongoing Funded
	Coordination of Fire Crews for project work	Ongoing Funded (limited availability)
	Grant programs for LRA & SRA areas adjacent to City of Richmond (e.g. East Richmond Heights)	Grant funding through CAL FIRE
City of Richmond Fire Department	Continue to build defensible space and vegetation management programs. Visually inspect property (public and private) within Richmond.	Additional funding needed
	Notify property owners when vegetation management standards are not being met, and achieve compliance, with 100% voluntary compliance as a goal	Additional funding needed
	Hire private contractors and CDC crews to maintain and enhance defensible space areas on public land and between natural areas and neighborhoods as funding allows	Additional funding needed
	Collaborate with neighboring fire agencies (Contra Costa County + Pinole) and land management agencies to enhance area fire safety (East Bay Regional Parks, East Bay Municipal Utilities District, Pacific Gas and Electric etc.)	Additional funding needed
City of Richmond - Parks and Landscaping Division	Continue to implement vegetation management programs in City owned open space, parks and street rights-of-way	Funding Needed
	Coordinate vegetation management programs with volunteers	Funding Needed
City of Richmond - Planning and Building Services Department	Continue to enforce applicable provisions of CBC7A and CRC R337.	Ongoing Funded
	Together with Fire Prevention staff monitor legislation for "home hardening" retrofit updated (requirements, funding, etc.)	Ongoing Funded
Contra Costa County Fire Prevention District (CCCFPD)	Annual code enforcement of Exterior Hazard Control Ordinance and standards; development and implementation of Defensible Space requirements in priority areas	Ongoing Funded
	Special assessment of hazardous areas and conditions with collaborative project planning, such as the senior residential community of Rossmoor.	Funding Needed
	Demonstration Garden at Station 10 on Treat Blvd	Funding Needed
	Education Programs in high priority hazard zone (HPHZ)	Funding Needed
	Firewise communities	Funding Needed
	Chipping service in HPHZ	Funding Needed
Diablo Fire Safe Council (DFSC)	Partners in Wildfire Prevention cost share program (Alameda and Contra Costa) - seed fund for hazardous fuel reduction projects + community chipping.	2019-20 grant funds + wait list of projects
	Good to Go! Evacuation action program for four Alameda and Contra Costa communities.	2019-20 grant funds
	Planning for wildfire - CWPP updates for Alameda and Contra Costa County Communities	2019-20 grant funds
	Pathway for a FIREWISE neighborhood - FIREWISE planning and hazardous fuel reduction projects	unfunded

(DFSC continued)	Retrofit for wildfire. Education and best management practices.	unfunded
East Bay Regional Park District	Project implementation in parks adjacent to Richmond. See Wildfire Hazard Reduction and Resource Management Plan.	Ongoing Funded
	High fire danger information - use restrictions	Ongoing Funded
	Integrated Pest Management Program (some treatments also include fuel reduction)	Ongoing Funded
Pacific Gas and Electric	High voltage and distribution lines vegetation maintenance	Ongoing Funded
	Community Wildfire Safety Program and Public Safety Power Shut offs (PSPS).	Ongoing Funded

Prioritizing Treatment of Structure Ignitability

5.1 Structure Ignitability

The presence of structures within the WUI exposes both the natural and developed environment to increased risk of destruction by wildfire. In areas where the accumulation of flammable vegetation coexists with residential development, an ignition can lead to catastrophic fire. Mitigation of hazards that contribute to ignitability can reduce the potential of fire loss.

Adoption and enforcement of fire and building codes is an essential part of managing the risk in the WUI. The California State Fire Marshal's Office developed state of the art building standards known as "Chapter 7A" effective January 1, 2008 for use on new building construction within Very High Hazard Severity Zones. California Residential Code (CRC) R337 requires those same codes for residential structures. Other pertinent codes are included in California Code of Regulations (CCR) Title 24, such as the California Building Code (CBC) Part 2, California Residential Code (CRC) Part 2.5, California Fire Code (CFC) Part 9, California Reference Standards Code (CRSC) Part 12. More detail about these codes, code compliance policies and accepted products can be found at <https://osfm.fire.ca.gov/divisions/wildfire-prevention-planning-engineering/wildland-hazards-building-codes/>. Many local cities have adopted the state fire codes for use within their jurisdictions, or have adopted codes that exceed these minimum state standards.

The Richmond Building Code meets the Chapter 7A and R337 standard for the high fire hazard areas. However these codes only apply for new construction, and not when remodeling existing homes. After the 2017 and 2018 devastating wildfires, California legislators began to introduce new bills calling for actions aimed at "structure hardening" to reduce potential damage from wildfire (see Section 5.4 for more detail). The implementation of these new programs has yet to play out.

It is also important to incorporate fire safety into the Richmond General Plan Safety Element. SB1241, adopted into law in 2012, required that General Plan Safety Elements address the risk of wildfire and that draft plans be reviewed by the California Board of Forestry to ensure they address wildfire. 2019 legislation has the potential to also set standards for evaluation of evacuation scenarios and other community wildfire safety measures.

No city or fire department can be expected to prevent all home losses in a WUI setting. The potential for a wildfire to outpace suppression efforts means that all homeowners in WUI areas must accept a high degree of risk, as well as responsibility.

5.2 Key Ignition Resistance Factors

The key to ignition resistance is the design of the structure, the materials used in its construction and the presence of well-maintained defensible space. Recent studies point to basic factors that affect the risk of a structure burning in a wildfire. A weakness in any of these areas can lead to a similar result – a destroyed or severely damaged home or

building. The following information is adapted from several sources including the Insurance Institute for Building and Home Safety. Additional information can be found at their website www.disastersafety.org/Wildfire.

Flammability of the Roof

Research shows that homes with a non-combustible roof and defensible space at least 30 to 60 feet around the structure have an 85-95% chance of survival in a wildfire.¹ At a minimum, a home structure should have a Class A-rated, fire-resistant roof cover or assembly, and preferably one that is self-extinguishing once a falling ember burns out. Self-extinguishing means that the firebrand will not burn through to the roof deck and flames will not spread to other parts of the roof. Without a fire-resistant roof, other approaches toward mitigation will fall short of protecting the home. For more information on roofing materials <https://www.nfpa.org/-/media/Files/Firewise/Fact-sheets/FirewiseFactSheetsRoofingMaterials.ashx?la=en>. For tips on hiring a roofing contractor <https://disastersafety.org/maintenance/tips-on-hiring-a-roofing-contractor/>.

Roof shape also plays an important role. If the roof has a lot of ridges and valleys, or roof segments that intersect with vertical walls, the house is more vulnerable to wildfire. Even a Class-A roof is more vulnerable because vegetative debris and wind-blown embers readily accumulate at these intersections and can expose combustible siding, vents or windows, as well as the roof, to fire.

Wind-blown debris and overhanging trees can lead to gutters full of leaves and needles on the roof and gutter. Research has shown that a home with a gutter full of leaves has enough fuel to ignite a roof, especially if there is a path for the fire to reach any exposed flammable surfaces such as the edges of roof structure or through vents. Keeping gutters clean of debris is especially important with a multi-story building, or at dormer windows where exterior siding would be exposed to flames from debris in gutters. If gutter covers are installed they need to be noncombustible.



Structure Openings – Vents, Doors and Windows

Many post-fire surveys of damaged buildings have shown that the attic/roof and foundation vents are key entry points for embers and flames. Areas where there are direct pathways to the attic, house or crawl space provide an easy entry point. This can include vents, soffits or windows prone to breaking when exposed to wildfire conditions (usually unprotected, single pane windows). Window fans, pet doors, and fireplaces chimneys can allow firebrands to enter if left open or unscreened.

Recommendations are for 1/8' mesh screening over vents. However, recent fires have shown that screened vents alone may fail to keep embers out of attics or other spaces. Pre-cut fire resistive covers are one solution. New technology combines several features that increase the effectiveness of preventing embers from entering these flammable spaces; however, maintenance issues need to be evaluated when these products are considered.

Testing has shown that single pane windows are highly vulnerable to breaking when exposed to wildfire conditions. Larger windows are more vulnerable to breaking than smaller windows. Some glass will break after only 1 to 3 minutes exposure to intense heat

¹ Foote, Ethan. "Wildland-Urban Interface Ignition Resistant Building Construction Recommendations." Community Wildfire Protection Plan Workshops, California Fire Alliance and California Fire Safe Council. August 2004.

allowing flames and embers to get inside and further ignite furnishings. Double pane windows with tempered glass on the outside pane can effectively increase the ability to survive a wildfire, as well as a long-term solution for energy conservation within the home.

Install window screens. Both plastic-clad fiberglass and metal screening will reduce radiant exposure to the glass and protect against ember entry, but neither will protect against flames. Skylights can be another entry point for embers or flames. For construction materials, placement and other precautions see <https://www.nfpa.org/-/media/Files/Firewise/Fact-sheets/FirewiseFactSheetsSkylights.ashx?la=en>.



Siding

Siding can be vulnerable for several reasons. If ignited, combustible siding can provide a path for flames to reach other vulnerable components such as windows or eaves. Second, a horizontal or vertical joint in the siding (or at the top or bottom of the material) can provide access for embers or flames into the house. Some materials such as vinyl siding will deform and fall off the wall at relative low heat or flame exposure. If this happens protection of the structure will depend on the underlying sheathing in the wall assembly. Avoid untreated wood shingle and vinyl siding.

Walls need to resist heat and flames as well, as embers. Non-combustible materials like three-coat stucco, fiber cement, brick and tile resist flames, but don't always resist heat and embers. Therefore, incorporating sheet-rock or other non-combustible sheathing material into the wall assembly underneath the exterior material will improve performance². Regardless of wall material choice, all gaps at the top or bottom edges, or at lap joints must be sealed or caulked to reduce the potential for ember intrusion. Embers can also accumulate at the foundation if the lower edges of the siding material are left unsealed. The more complicated the lap joint, such as tongue-and-groove or shiplap, the better the resistance from flame or embers. Attention to construction detail, such as use of metal flashing where fences or decks attach to walls can prevent accumulation of debris and slow ignition.

Overhanging Structures

Eaves, alcoves, entry ways, patio covers, decks, porches, and exterior stairways all have the potential to "trap" heat under them or create areas where burning embers can accumulate. Openings or gaps in blocking also result in areas where wind-blown embers can become lodged and ignite debris or wood in these areas. Use 1/8' mesh screening over openings, similar to treatment for vents. Box in open eaves to create a soffited eave. For more information on under-eave construction see <https://www.nfpa.org/-/media/Files/Firewise/Fact-sheets/FirewiseFactSheetsUnderEaves.ashx?la=en> and https://www.fema.gov/media-library-data/20130726-1652-20490-2869/fema_p_737_fs_6.pdf. For information on attics and crawl space vents see https://www.fema.gov/media-library-data/20130726-1652-20490-2869/fema_p_737_fs_6.pdf.

² Code requires for new construction in high severity zones exterior walls have a minimum of 1 hour rated wall, which typically includes rated sheetrock (type x).

Decking

Decks, patios and porches can become a pathway for fire into a home. Most decks are attached directly to a home (often directly to the home's combustible siding). Furthermore, most decks are located adjacent to doors, windows, sliding glass doors or other openings. Materials used to build the deck, the furniture or other items on top of the deck, as well as the items stored beneath them, are also usually combustible. Decks and porches can be particularly vulnerable when the home is sited on a slope, or when surrounded by vegetation where flame lengths can reach more than 30 feet exposing even elevated decks. More information on wildfire resistance and decks <https://www.nfpa.org/-/media/Files/Firewise/Fact-sheets/FirewiseFactSheetsDecks.ashx?la=en> and for fire spread on ember ignited decks <https://www.nfpa.org/-/media/Files/Firewise/Fact-sheets/FirewiseFactSheetsEmberIgnitedDecks.ashx?la=en>.

The combustibility of wood deck boards is common knowledge; however, performance of plastic composite decking products is less well known. Some manufacturers are incorporating fire retardant chemicals into these products. Information on specific products can be searched at the building materials listing at the California State Fire Marshal Building Materials Listing website <https://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/building-materials-listing/>. In general, large structural members will resist ignition better than small wood boards.

Fencing

Burning fencing can both generate embers and cause direct flame contact to a home. Fencing located directly adjacent to a home should be constructed of noncombustible materials. Using noncombustible fencing where it attaches to the building, and within the zero to five-foot noncombustible zone, reduces the opportunity of a burning fence igniting the exterior of the structure. Fencing products are often available in eight-foot sections and use of that full section of noncombustible material is recommended.

A fence design that allows for greater air flow makes it more difficult for wind-blown embers to accumulate at a plank or on a lattice panel and spread to horizontal supports. If an ignition occurs, it's also more difficult for lateral flame spread to occur in the more open fencing types. Vinyl fencing is not vulnerable to ember exposures alone, but did burn when subjected to flames from burning debris blown against the fence. Vinyl fencing will deform if subjected to radiant heat. For more detail on material, installation and maintenance choices see <https://www.nfpa.org/-/media/Files/Firewise/Fact-sheets/FirewiseFactSheetsFencing.ashx?la=en>.

The area at the base of the fence should be kept clear of debris. Flame spread to the building will be more likely if fine vegetative fuels (e.g., pine needles, leaf litter and small twigs) have accumulated at the base of a fence. Avoid placement of combustible mulch near the fence.

Perimeter Fencing

When neighboring buildings are located within 20 feet of each other, research in Australia demonstrated the ability of panelized steel fencing to resist a radiant heat exposure. Use of



solid steel fencing for the perimeter area can serve as a radiant barrier, providing added protection should a neighboring building ignite and burn.³

Fuel Hazards

Any fuel source that will bring flames close to the structure can be a hazard. Examples of fuel hazards include:

- flammable plants close to a wall,
- dead foliage that builds up underneath succulents or other normally fire-resistant plants,
- certain types of mulch or
- a combustible fence located close enough to allow flames to contact the overhanging roof above.

Fuel sources within the “defensible space” area that support a high intensity spot fire are especially problematic. These include any trees that can quickly become a fire torch (such as an untrimmed palm tree), a wooden trellis made of small lumber sizes, playground equipment made with wood pieces or a pile of firewood on the ground or in a wheelbarrow.

A noncombustible zone from 0-5 feet of the structure minimizes the likelihood of wind-blown embers igniting fine fuels (such as bark mulch) located close to the building. Ember-ignited mulch can result in a radiant heat and/or flaming exposure to the building’s exterior

Access to the property

If firefighters and their equipment cannot gain access to the property and a water source, there is little chance they can protect the home. Access also affects the ability of the homeowner to evacuate the site should the need arise. In the older developed areas of Richmond, the road patterns were established when there were fewer homes in the hills and fewer cars per residence. Today these narrow roads can become constricted with on-street parking, temporary lane closures, and encroachments into the road right of way by construction or by overgrown roadside vegetation.

Surrounding topography and location of structures

Adjacent steep slopes and topographic features, such as natural chimneys or chutes, can intensify fire behavior. Structures located mid-slope or at the top of a steep slope are more likely to be damaged. A steeper slope will result in a faster moving fire, with longer flame lengths. A home with little setback from the slope will need to be more aggressive with vegetation treatment and maintenance.

Weather and “Red Flag” Conditions

Strong winds blowing a fire toward a house will have the same effect as being located on a slope. The fire will move faster and burn more intensely with taller flame lengths, blowing embers in front of the fire during periods of high winds. Throughout Contra Costa County these high winds are often accompanied with an increase in temperature and decrease in relative humidity creating “Red Flag” conditions that further dry vegetation and wood building materials.

³ <http://www.bushfirecrc.com/news/media-release/fence-against-bushfire-attack-research> and http://www.bushfirecrc.com/sites/default/files/managed/resource/_6baf_bluescope_fence_report_final_0.pdf

5.3 Improving the Survivability of Structures within the WUI

Protecting structures exposed to wildfires is not a simple matter. Structures can ignite due to 1) direct exposure to flames, 2) from radiated heat or 3) from embers. All three sources must be addressed in order to improve the survivability of structures within the WUI. It is recommended that the following measures be taken:

1. Reduce the amount of heat the structure will be exposed to through managing vegetation, creating defensible space and protective building design and details.
2. Limit the time the structure is exposed to heat through vegetation management. Establishing a low fuel "home ignition zone" immediately adjacent to structures and creating "defensible space" in the first 100 feet from the house is critical.
3. Use fire resistant building materials and construction methods.
4. Remove combustible materials stored near structures.

Creating an effective defensible space around the structure and maintaining a fire safe landscape are critical to minimizing the threat of ignition. The homes in Richmond are subject to regulations that require compliance with defensible space standards (see Appendix B Notice of Defensible Space Inspection).

The selection of a building's site and materials has direct relationship to its survivability. New structures need to be located to reduce their exposure to the most intense part of a wildfire that might sweep across the site. There also are many noncombustible and fire resistive materials and treatments available to better protect structures and inhibit fire spread. However, these have limited application since there is little new construction in many Richmond neighborhoods (with the exception of Point Molate).

5.4 "Home Hardening" - Retrofitting an Existing Structure for Survivability

The areas at highest risk from wildfire in Richmond are largely built out (with the exception of Point Molate). In many areas new construction will occur as infill or "tear-down" reconstruction between existing homes, so the new building codes offer few opportunities to increase structure survivability. In these neighborhoods, identifying opportunities to retrofit existing homes and businesses is key to reducing losses due to wildfire. In 2018 legislation, AB2911 (Friedman) was passed into law, requiring the Office of the State Fire Marshal create a list of low cost retrofits by January 31, 2020 that provide for comprehensive site and structure fire risk reduction to protect structures from fire risk.

Funding for "home hardening" (retrofit of existing structures to reduce loss from wildfire) has been non-existent in the past, though 2019 legislation AB38 Fire Safety (Wood) proposed a \$1 billion revolving loan fund for "home hardening." Other legislation proposed included General Plan Safety Element updates to include a comprehensive retrofit plan for communities (SB182, Jackson), a revolving fund to assist homeowners with the cost of the work, disclosure requirements upon sale of homes and other actions. It will take years for these programs to become fully funded and functional, but they offer guidance for local actions.

Priority Action 4: Home Hardening

Recommendation: Develop education and training related to retrofit of existing homes and structures to improve their survivability (home hardening).

Strategies and Implementation Actions:

- Strategy HH1: Identify what can be done without major remodel and evaluate new technologies, materials and products.
 - Action HH1.1: Find funding for education and training program
- Strategy HH2: Education and training for homeowners to make their home ignition resistant.
 - Action HH2.1: Develop an educational booklet of simple things homeowners can do to make their home ignition resistant
- Strategy HH3: Develop dissemination and delivery methods, including building permit counters.
 - Incorporate in Strategy ED1 action items.

Lead and Partners: Richmond Fire Department working with Building Department. Institute for Building and Home Safety has information and research. State Fire Marshal’s Office to develop information by 1/31/2020.

Time frame: On-going

Estimated Funding Need: \$\$ for training and materials.

The Science Behind Home Hardening

The Insurance Institute for Business and Home Safety (IBHS) continues to sponsor building safety research that leads to real-world solutions. They have identified key areas at risk and offer retrofit ideas.

The following information has been generalized for planning purposes. Consult building professionals and local building departments for more detail related to individual structures. Adapted from “Wildfire Home Assessment and Checklist,” download at <https://www.iafc.org/topics-and-tools/resources/resource/ibhs-wildfire-checklist>.

Retrofitting Existing Structures to Increase Wildfire Survivability		
<i>Survivability Threat</i>	<i>Retrofit</i>	<i>Relative Cost/ Ease</i>
Roof – the most vulnerable part of a home		
Combustible roof.	Professional roof inspection to determine if covering and assembly are not “Class A.” Need to remove old roofs.	\$\$\$\$ Contractor
Gaps at edges or ridges or other openings in tile (clay) or metal roof	Install bird stops in gaps at edges or ridges. Plug any roof openings that are not functioning as vents	\$\$-\$\$ Contractor or Experienced DIY
Combustible siding where lower level roof (first floor) meets upper wall or upper level roof (second floor)	Replace siding with more fire resistant material and underlayment	\$\$-\$\$\$\$ Contractor or Experienced DIY
Vegetative debris accumulated on roof. Ember accumulation at roof-wall intersection increases risk particularly if combustible siding.	Routinely remove debris from roof. For complex steep, roofs may consider hiring professional.	Free - \$ Agile homeowner

Retrofitting Existing Structures to Increase Wildfire Survivability

<i>Survivability Threat</i>	<i>Retrofit</i>	<i>Relative Cost/ Ease</i>
Vents – vulnerable to wind-blown embers and flames		
Unscreened or unprotected vents	Many types of new vents – style and availability vary by region. Attach screens (1/8" opening). Or prepare solid covers of 1/2" plywood to install prior to evacuation and remove upon return. Use caution when installing or removing covers on upper story vents.	\$\$-\$\$\$ \$ Agile homeowner
Planning to replace vents	Several types of new vent covers on market designed to reduce risk of wind-blown embers. See category 8165 Vents for WUI https://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/building-materials-listing/bml-search-building-materials-listing/	\$\$ Experienced DiY
Gutters – fuel for falling embers could lead to fire in attic		
Vegetative debris accumulated in gutters	Clean gutters on regular gutters. For complex steep, roofs may consider hiring professional.	Free - \$ Agile homeowner
Tired of cleaning gutters	Gutter covers help manage debris build up. A variety of designs are available. Devises can result in accumulation of debris on roof behind gutter – so some maintenance may still be required.	\$\$ - \$\$\$
Open Eaves or Projections – vulnerable to flame or embers could lead to fire in attic		
Open eave construction or visible gaps between blocking and rafter tails.	Plug openings with durable caulk or install non-combustible covering over blocking to eliminate openings. Alternatively box in eaves. This method may require vents to remove excess moisture.	\$\$\$\$ Contractor or Experienced DIY
Combustible soffit material or materials used to box in eaves (such as wood boards, untreated plywood).	Replace with non-combustible material such as fiber cement product or exterior fire retardant treated plywood. Vinyl soffit material not recommended as it will deform and sag causing gaps.	\$\$\$\$ Contractor or Experienced DIY

Retrofitting Existing Structures to Increase Wildfire Survivability		
<i>Survivability Threat</i>	<i>Retrofit</i>	<i>Relative Cost/ Ease</i>
Windows – open windows are most vulnerable. The vulnerable part of a closed window is the glass.		
Single pane windows	Install dual pane windows. Preferred are dual pane, insulated glass with added benefit of greater energy conservation Tempered glass is 4 times more resistant to breaking in wildfire. Consider dual-pane tempered glass. Cost increases are relative to the opening size.	\$\$\$ - \$\$\$\$ Contractor
No window coverings to protect from glass breakage	Shutters or pre-made covers will protect window from embers, debris and radiant heat exposure. These would be installed prior to evacuation. Least expensive alternative is 1/2 plywood but need to clear area of combustible material that could ignite plywood.	\$-\$\$ Contractor or Experienced DIY
Siding – fire from ignited siding can spread into stud cavity and up wall into eave, soffit or attic as well as expose window to flames.		
Combustible siding Panelized products have fewer lap joints and considered less vulnerable.	Re-siding is expensive but can be worthwhile if building is 15 feet or closer to adjacent properties or if inadequate defensible space. Replace with non-combustible siding so vertical flame spread will not be a problem (unless there are combustible materials or highly flammable plants adjacent to wall – remove those fuel sources as well. Siding products and assemblies that are better able to resist penetration of flames into stud cavity can be found at category 8140 Exterior Wall Siding and Sheathing for WUI at https://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/building-materials-listing/bml-search-building-materials-listing/	\$\$\$\$ Contractor
Gaps in joints of siding panels or simple laps joint or plain bevel joint	Panel products have fewer lap joints and can be considered less vulnerable. Wood siding shingles and plain bevel lap joints are most vulnerable.	\$\$\$\$ Contractor
Garage (detached or attached)		
Garage door	Weather seal the perimeter of garage doors If open garage, install garage door to help protect combustible materials stored there.	\$ Experienced DIY \$\$-\$\$\$ Contractor or Experienced DIY

Retrofitting Existing Structures to Increase Wildfire Survivability		
<i>Survivability Threat</i>	<i>Retrofit</i>	<i>Relative Cost/ Ease</i>
Decks – decks can lead a wildfire directly into the home.		
Deck boards of combustible material	Replace deck boards with fire or ignition resistant material. Learn more about choosing wildfire-resistant decking at 8110 Decking for WUI at https://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/building-materials-listing/bml-search-building-materials-listing/	\$\$\$-\$\$\$\$ Contractor or Experienced DIY
Combustible materials stored under or on top of deck	Move material to an enclosed area away from structure. If underside of deck is enclosed, be sure to address moisture management issues through drainage and ventilation	Free-\$\$ Experienced DIY
Enclose area below deck to reduce accumulation of wind blown debris or embers	Use solid non-flammable material (fiber cement product or exterior fire retardant treated plywood; not lattice to enclose area below decks. Be sure to address moisture management issues through drainage and ventilation	\$-\$\$ Experienced DIY
Fences – Fences can lead a wildfire directly into a home.		
Fences of combustible material	Replace with a non-combustible fence or use non-combustible components such as heavy wire mesh in a wood frame. Non-combustible fencing (at least a 5-foot span) should be used in locations where the fence is directly attached to the building.	\$-\$\$ Contractor or Experienced DIY
Yard Structures – Any fuel source, decorative or functional within 30 feet of a home.		
Play equipment, firewood, trellises or other yard features that could bring flames to a home.	Combustible structures should be moved 30 to 50 feet away from a home.	\$\$\$-\$\$\$\$ Contractor or Experienced DIY

Sustaining the Plan

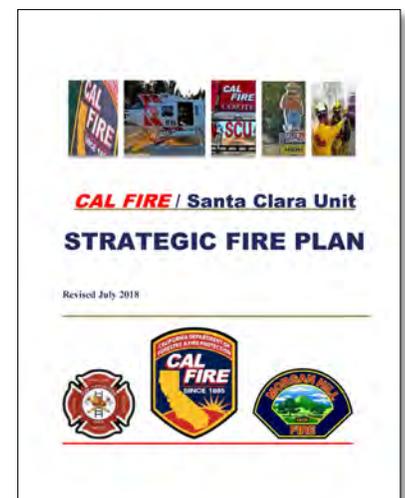
6.1 Updates of Action Plan

To ensure long-term success the Richmond CWPP needs to include a method for changing, updating and revising the plan. As partners learn from successes and challenges, they may identify new actions, or propose a shift in how decisions are made or actions accomplished.

It is important to recognize the resources needed to engage in a complex planning, monitoring and adaptive management process. The collaborative planning effort for the Richmond Community Wildfire Protection Plan was funded through a generous grant; however, similar funding is unlikely to be available for update efforts. Regardless, streamlined communications can leverage the initial planning effort to maintain a functioning collaboration and provide updates.

Project partners have agreed to the following roles in sustaining the Plan:

- City of Richmond Fire Department: The Fire Chief provides an annual report to the City Council that can identify upcoming issues as well as progress.
- City of Richmond IT Department: Track plan via Richmond’s Open Data Portal to show statistics of community and staff members (e.g those who have received CPR, CERT Training etc.).
- Diablo Fire Safe Council (DFSC): DFSC is a 501(c)3 non-profit group that provides a forum for community and interagency partnerships and assistance with cost share programs and planning for wildfire safety in both Contra Costa and Alameda Counties. They are in the unique position to continue to support Richmond and their neighboring communities.
- Contra Costa County Association of Fire Chiefs: The Contra Costa County Association of Fire Chiefs provides a forum for interagency information sharing across the many fire jurisdictions. They are in the unique position to continue to foster inter-jurisdictional cooperation on WUI issues and emergency response.
- East Bay Regional Park District: As a part of their regular planning process at public meetings, review the next year’s proposed program of work for fuels management on park district lands. As part of the annual budget development process, during a meeting of the EBRPD Board of Director’s Executive Committee, report the prior year’s fuels management accomplishments and present the proposed program of work for the next year. Work with cooperators to plan and conduct work in a way that improves fire protection and program efficiencies for both EBRPD and the cooperator.
- CAL FIRE: The Santa Clara Unit Strategic Plan updates provide opportunity to view wildfire protection for Contra Costa County in context with neighboring Alameda, Santa Clara and San Joaquin Counties. Contra Costa County is Battalion 6 of seven geographically based battalions in CAL FIREs Santa Clara Unit. The most recent plan was



completed in July 2018 <https://osfm.fire.ca.gov/media/3121/fpppdf1619.pdf>. The Santa Clara Unit collects information from the various stakeholders to develop their unit plan each June.

- **County and Local Jurisdictions:** Contra Costa County has provided leadership in the development and update of FEMA Local Hazard Mitigation Plan; completed once every 5 years. Local jurisdictions have provided information for the local annexes. The next update is scheduled for 2024.
- **Other Partners:** **Note: This section to be further developed as the plan is implemented.**

6.2 Monitoring, Evaluating and Adapting Strategies

The following framework offers strategies to monitor, evaluate and adapt the elements of the Richmond CWPP¹. Strategies might include:

- Only monitor what matters. Partners should identify key goals and objectives and make decisions to monitor what is most important to the long-term sustainability of their CWPP.
- Tracking accomplishments and identifying the extent to which Richmond CWPP goals have been met. This might include development of “success stories.” (Examples can be found at www.diablofiresafe.org/current.html.)
- Examining collaborative relationships and their contributions to CWPP implementation, including existing participants and potential new partners.
- Identifying actions and priority fuels reduction projects that have not been implemented and determining why.
- Setting a course for future actions and updating the plan.
- Evaluating the resources necessary for successful CWPP implementation. Identifying needed community and homeowner outreach and education programs.

In conducting an evaluation it is important to think critically about the kind of information that is accessible, what is most important to evaluate and how it might influence future priority activities. For example, the number of homes in a neighborhood with an evacuation plan provides insight into the level of preparedness among the general public, but may be difficult to obtain. Each action team should adapt the evaluation process, how information and results are documented with an eye toward refinements of the CWPP to meet their own needs. The following ideas for monitoring and evaluation are provided as suggestions.

6.2.1 Evaluating Information, Education and Collaborative Planning

Understanding the extent to which information, education and collaborative planning have been maintained, grown or diminished through implementation of the CWPP will help identify strategies to strengthen future efforts. Monitoring and evaluation might address:

¹ Evaluation framework adapted from: Community Wildfire Protection Plan Evaluation Guide. Prepared by Resource Innovations, Institute for a Sustainable Environment. August 2008. University of Oregon. https://static.colostate.edu/client-files/csfs/pdfs/eval_9-8-08_web.pdf. Accessed 9/24/19.

Programs: What kind of information, education and public involvement has the CWPP or its implementation fostered? Public meetings, trainings, field trips, demonstration projects, household visits, youth engagement, community events, clean up days.

Public Awareness: What kind of change in public awareness about wildfire has resulted from the plan or implementation actions? Knowledge of fire policies and regulations; change in number and type of human caused wildfires; awareness of local efforts to increase emergency preparedness; outreach efforts or techniques.

Activities: What kinds of activities have citizens taken to reduce wildfire risks as a result of the plan? Defensible space, fuel reduction, household emergency plans, woody debris disposal.

New information: Are there new or updated data sources that might change the risk assessment and influence priorities? Changes to process used to identify fuels treatments priorities? New wildfire related policies or ordinances? Index to access specific information?

Involvement: Who has been involved with CWPP development and implementation? How have relationships changed or grown? What expertise or resources did partners bring? Numbers and types of partners (local, state, federal)? Accomplishments or challenges?

Implementation Capacity: How has the collaborative process assisted in implementing the CWPP and building capacity for the community to reduce wildfire risk? More partnerships, increased financial resources, increases in programs or activities?

Engagement: Have the partners involved in the planning process remained engaged in the implementation? Have new partners become involved?

6.2.2 Evaluating Suppression Capability and Emergency Preparedness

Comprehensive emergency management plays a key role in reducing a community's risk from wildfire and other hazards. Integrating federal requirements for multi-hazard mitigation within the CWPP efforts can help access federal funds through FEMA and Department of Homeland Security.

Alignment: Is the CWPP aligned with emergency operations plans and other hazard mitigation plans? Addressing National Incident Management System (NIMS), State Emergency Management Plan (SEMS) and Incident Command System (ICS) training?

Evacuation Planning: Does the CWPP include an evacuation plan? Has the plan been tested? Are there local neighborhood evacuation plans, information about people with access or functional needs, animal preparedness, communication systems, resources list?

6.2.3 Evaluating Fuel Reduction

Monitoring hazardous fuels reduction projects on private and public lands will assist stakeholders in understanding the extent to which risk reduction goals, climate change actions, native habitat preservation and other goals are being accomplished. Monitoring these projects allows stakeholders to better understand the extent of resources need to accomplish and maintain goals, as well as to help in identifying future priorities.

Fuel Reduction on Public Lands: How many acres have been treated on public land that had been identified as high priority projects? Total number of acres treated; number and percentage in WUI, number and percentage within CWPP priority area; treatment types?

Fuel Reduction on Private Lands: How many acres have been treated on private land that had been identified as high priority projects? Total number of acres treated; treatment types; number of homes with defensible space; number and percentage treated in low income communities/vulnerable populations?

Compliance: How many homes are in compliance with local fuel reduction around homes requirements? Weed abatement requirements? Defensible space inspections?

Joint Projects: How many projects have spanned ownership boundaries including public and private lands?

Jobs: Economic development and local jobs resulting from fuels reduction or restoration activities? Number of green tons/ volume of woody fuel utilized? Number of part-time/ full time jobs? Percentage of local labor?

Environmental Protection: Ecological monitoring to assess environmental outcomes and maintenance requirements? Community surveys using photo points? Vegetation/ invasive weed surveys?

6.2.4 Evaluating Reducing Structure Ignitability

Monitoring structure survivability of existing structures and new developments span a wide range of actions including “home hardening” retrofit, codes, public knowledge and emergency response capability.

Fire Statistics: Wildfire loss in year reporting on? Number of fire starts within high hazard areas? Number of human caused fires? Number of homes damaged/ lost to wildfire?

Codes and Regulations: Current codes and regulations for wildfire hazards? Building codes (Chapter 7A, R337 or better)? How is new development increasing in high hazard areas? Requirements for new developments? Mechanism for long-term open space fuel management? Infill requirements? Infrastructure design requirements (roads, sprinklers, utilities = NFPA standards)?

Public Education: Public knowledge and understanding about structure ignitability? Homeowner education on how to reduce ignitability? How many homes have been retrofitted? Number and percentage of homes in high hazard area included in fire district?

Response Capabilities: Changes of local fire agency response capability? Increase in certified fire fighters/ wildfire training? Upgraded or new fire suppression equipment? Changes in response time, infrastructure or access routes?

Signature Page

City of Richmond, California Community Wildfire Protection Plan Mutual Agreement

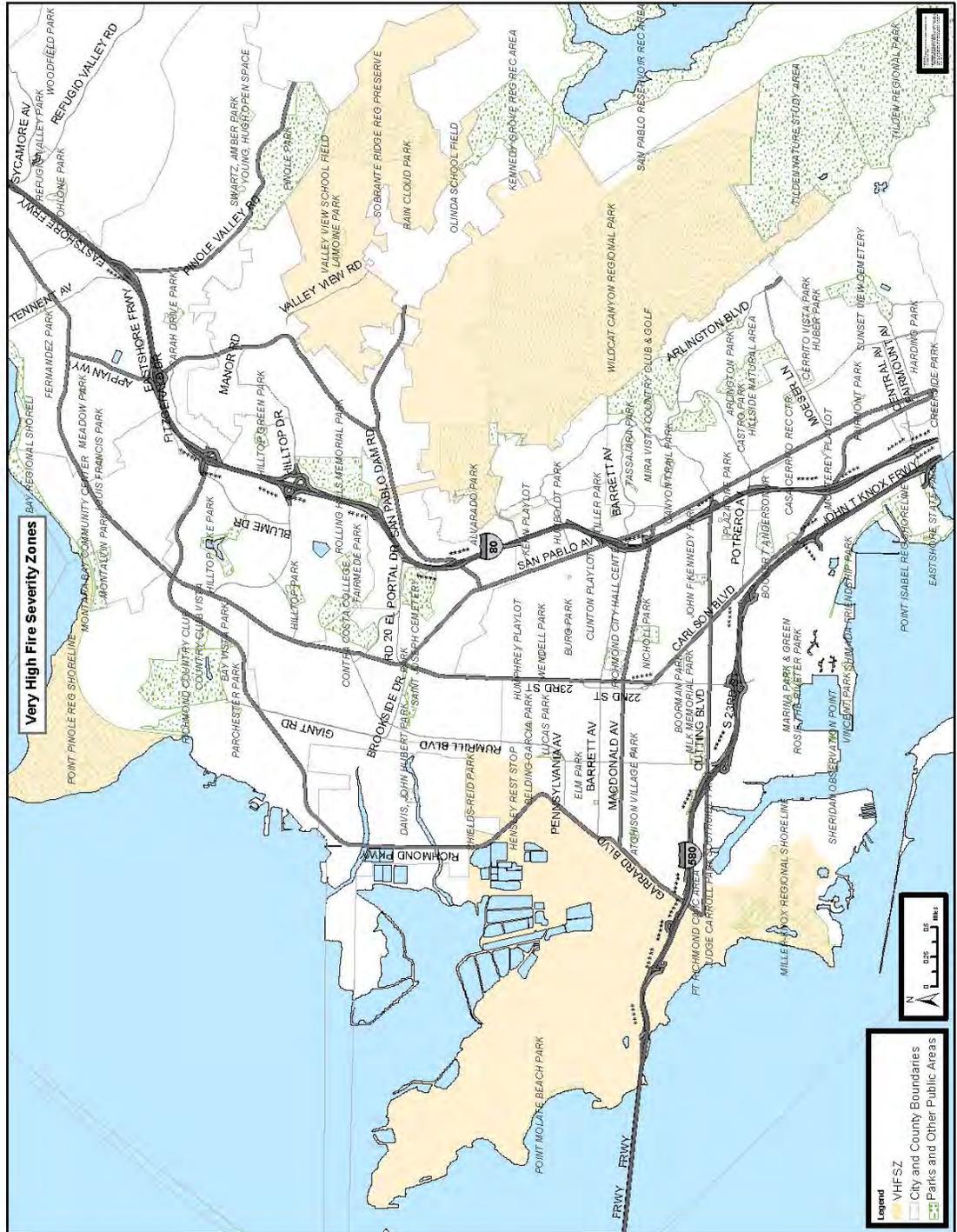
This Community Wildfire Protection Plan developed for the City of Richmond:

- Was collaboratively developed. Interested parties and agencies managing land in Richmond have been consulted.
- This plan identifies and prioritizes areas for hazardous fuels reduction treatments and recommends types and methods of treatments that will protect community members and values at risk.
- This plan recommends measures to reduce ignitability of structures throughout the area addressed by the plan.

Approved by Resolution 1-20 on January 14, 2020.
City of Richmond City Council

Appendix A

Fire Hazard Severity and WUI Area Map



Appendix B

Richmond Defensible Space Inspections



Richmond Fire Department
Prevention Services Division
VHFHSZ—100 (07/19)

Date: _____

NOTICE OF DEFENSIBLE SPACE INSPECTION

A fire department representative has inspected your property for fire hazards.

You are hereby notified to correct the violation(s) indicated below. Failure to correct these violations may result in a citation and fine.

Owner Name:		Inspection Address/APN:	
Inspection No.	Captain/Inspector	Contact Number:	Contact Email address:
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	Employee #:		

Zone 1 / Within 30 of all structures or to the property line (Refer to illustration below):

- A. Remove all branches within 10 feet of any chimney or stovepipe outlet, pursuant to PRC § 4291 (a) (4) and 14 CCR § 1299.03 (a)(2).
- B. Remove leaves, needles or other vegetation on roofs, gutters, decks, porches, stairways, etc. pursuant to PRC § 4291 (a)(6) and 14 CCR § 1299.03 (a)(1).
- C. Remove all dead and dying trees, branches and shrubs or other plants adjacent to or overhanging buildings, pursuant to PRC § 4291 (a)(5) and 14 CCR § 1299.03 (a)(2).
- D. Remove all dead and dying grass, plants, shrubs, trees, branches, leaves, weeds and needles, pursuant to 14 CCR § 1299.03 (a)(1).
- E. Remove or separate live flammable ground cover and shrubs, pursuant to PRC § 4291 (a)(1) and BOF General Guidelines item 1.
- F. Remove flammable vegetation and items that could catch fire which are adjacent to or below decks, balconies, and stairs, pursuant to 14 CCR § 1299.03 (a)(4).
- G. Relocate exposed wood piles outside Zone 1, unless completely covered in a fire resistive material, pursuant to 14 CCR § 1299.03 (a)(3).

Zone 2 / With 30-100 feet of all structures or to the property line (Refer to illustration below):

- H. Cut annual grasses and forbs to a maximum of 4 inches in height, pursuant to 14 CCR § 1299.03 (b)(2)(B).
- I. Remove fuels in accordance with the Fuel Separation or Continuous Tree Canopy guidelines, pursuant to BOF General Guidelines item 4.
- J. All exposed wood piles must have a minimum of ten (10) feet clearance, down to bare mineral soil, in all directions, pursuant to 14 CCR § 1299.03 (b)(2)(C).
- K. Dead and dying wood surface fuels and aerial fuels shall be removed. Loose surface litter, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches, shall be permitted to a maximum depth of three (3) inches, pursuant to 14 CCR § 1299.03 (a)(1).

Defensible and Reduced Fuel Zone / Within 100 feet of all structures or to the property line (Refer to illustration below):

- L. Logs or stumps embedded in the soil must be removed or isolated from other vegetation, pursuant to BOF General Guidelines item 3.

Other Requirements:

- M. Lawnmowers, string trimmers, chainsaws, grinders, welders, and tractors can all start fires if not used properly. Use caution and mow before 10: 00 a.m. when the air is calm, cool, and moist.
- N. Address numbers shall be displayed in contrasting colors (4" minimum size) and readable from the street or access road, pursuant to CFC § 505.1.
- O. Equip chimney or stovepipe openings with a metal screen having openings between 3/8 inch and 1/2 inch, pursuant to CBC § 2113.9.2.

COMMENTS:

IMPORTANT All violations shall be cleared within **30 days** of the inspection date.
A re-inspection of the property will occur after the 30-day compliance timeframe.



KNOW THE LAW BE FIRE SMART

100 FEET OF DEFENSIBLE SPACE IS REQUIRED UNDER THE PUBLIC RESOURCES CODE (PRC) 4291. CALIFORNIA BUILDING CODE CHAPTER 7A REQUIRES CERTAIN CONSTRUCTION MATERIALS AND METHODS FOR HOMES IN WILDLAND AREAS. BE SURE TO CONTACT YOUR LOCAL FIRE DEPARTMENT FOR ADDITIONAL REQUIREMENTS TO ENSURE YOUR HOME IS COMPLIANT WITH THE LAW.

READYFORWILDFIRE.ORG/THELAW

Signature of resident: _____ No One Home:

440 Civic Center Plaza, P.O. Box 4046, Richmond, CA 94804-1630
Telephone: (510) 307-8031 Fax: (510) 307-8048 Email: FirePrevention@ci.richmond.ca.us

Fuel Separation Standard

Pursuant to City of Richmond Resolution 192-95 (Fire Hazard Reduction Vegetation Management Standards Exhibit B), Section II, item C, Number 4C, all weeds and grass shall be cleared and maintained at a height no greater than 6 inches above the ground. Horizontal clearance between shrubs should be 4 to 40 feet depending on the slope of the land and vegetation type/size. Horizontal clearance between tree canopies should be 10 to 30 feet depending on slope and vegetation type/size. Vertical clearance between surface fuels and lower tree limbs should be 4 to 40 feet depending on slope and vegetation type. Check the chart below for an estimation of clearance distance. Any questions regarding requirements for a specific property should be addressed with the Richmond Fire Prevention Division (510) 307-8031.

Minimum Horizontal Spacing Guidelines

Slope	Shrubs, Ground Covers & Other Ornamental Plants	Trees
	Space required between ground cover, plants, bushes, shrubs, seedling or sapling trees, etc.	Space required between tree canopies or groups of trees
Flat or gentle slope (0% to 20%)	2 times the height of the plant	10 feet
Moderate slope (20% to 40%)	4 times the height of the plant	20 feet
Steep slope (greater than 40%)	6 times the height of the plant	30 feet

Continuous Tree Canopy Standard

Pursuant to City of Richmond Resolution 192-95 (Fire Hazard Reduction Vegetation Management Standards Exhibit B), Section II, to achieve defensible space while keeping a stand of larger trees with a continuous tree canopy, adhere to the guidelines below:

On mature trees, limbs should be removed up to 10 feet above the ground. Smaller trees should be limbed to 1/3 of their height up to 6 feet above the ground. Steeper slopes, and more severe fire danger will dictate pruning heights on the upper end of the scale.

All fire hazardous vegetation with the exception of weeds and grass shall be cleared and maintained to a height no greater than 18 inches above the ground.

Public Resource Code PRC § 4291. (a) A person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material, shall at all times do all of the following:

(1) Maintain defensible space of 100 feet from each side and from the front and rear of the structure, but not beyond the property line except as provided in paragraph (2). The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location, and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. This paragraph does not apply to single specimens of trees or other vegetation that are well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a structure or from a structure to other nearby vegetation. The intensity of fuels management may vary within the 100-foot perimeter of the structure, the most intense being within the first 30 feet around the structure. Consistent with fuels management objectives, steps should be taken to minimize erosion. For the purposes of this paragraph, "fuel" means any combustible material, including petroleum-based products and wildland fuels.

(2) A greater distance than that required under paragraph (1) may be required by state law, local ordinance, rule, or regulation. Clearance beyond the property line may only be required if the state law, local ordinance, rule, or regulation includes findings that the clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. Clearance on adjacent property shall only be conducted following written consent by the adjacent landowner.

(3) An insurance company that insures an occupied dwelling or occupied structure may require a greater distance than that required under paragraph (1) if a fire expert, designated by the director, provides findings that the clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. The greater distance may not be beyond the property line unless allowed by state law, local ordinance, rule, or regulation.

(4) Remove that portion of a tree that extends within 10 feet of the outlet of a chimney or stovepipe.

(5) Maintain a tree, shrub, or other plant adjacent to or overhanging a building free of dead or dying wood. (6) Maintain the roof of a structure free of leaves, needles, or other vegetative materials.

PRC § 4119. The Richmond Fire department, or its duly authorized agent, shall enforce the state forest and fire laws. The department may inspect all properties, except the interior of dwellings, subject to the state forest and fire laws, for the purpose of ascertaining compliance with such laws.

Structures: 0'-10'

Embers are your home's biggest threat! Small details here make a big difference in protection. Removing all objects and fuels that can ignite and protect openings where embers can enter.

Zone 1: 0'-30'

Zone 1 extends 30 feet from building, decks and other structures. Keep this area "Lean, Clean, and Green," and repeat regularly during fire season.

Zone 2: 30'-100'

Zone 2 extends 30 feet from building, decks and other structures. Reduce fuel for fire and separate trees and shrubs in this area. Remove dead vegetation regularly.

All Zones 1: 0'-100' +

Some measures must be taken equally in both Zones, from 0 to 100 feet. Take action all the way to your property line and work with neighbors to expand Defensible Space. Create fuel breaks to protect structures.

DEFENSIBLE SPACE ZONES MAKE UP THE 100' DEFENSIBLE SPACE REQUIRED BY LAW

BE EMBER AWARE!

The First 10 Feet is Critical

The area closest to your home, driveway, and nearby roads is critical. Keep all surfaces of your home and other structures free of leaves and debris.

Small handful of leaves or needles in a gutter, on your roof, at the base of a wall, or on a deck may be enough to ignite your home. Don't forget the undersides of decks.

Hardening Your Home

Embers are the most significant cause of home ignitions during wildfires. "Hardening" your home to protect from embers is critically important, and can be as simple as retrofitting vents, sealing gaps and openings, weather-stripping doors, and replacing jute doormats with rubber can protect your home. Look for any gaps more than 1/8" as a potential entry point for embers.

ZONE 1: REQUIREMENTS "LEAN, CLEAN & GREEN"

- Remove all dead grasses, plants, and weeds, maintain less than 4" grass levels.
- Remove all dead or dry leaves, needles, and combustible plants from roof, gutters, decks, porches, windows and awnings, and stairways.
- Trim trees to remove limbs 6' to 10' from the ground, including branches that hang over your roof and 10 feet from chimneys.
- Relocate exposed firewood or lumber piles outside of Zone 1 unless they are covered.
- Cover Chimney outlets or flues with a 1/2" mesh spark-arrestor.

ZONE 2: REQUIREMENTS "Reduce Fuel"

- Create horizontal spacing between shrubs and trees.
- Create vertical spacing between grass, shrubs and trees.
- Mow before 10 a.m. and never on a hot or windy day. String trimmers are a safe option (vs. lawnmowers) for clearing vegetation.

Driveway & Road Clearance

- Property owners are responsible for vegetation adjacent to roads and driveways a minimum of 10' overhead and 10' from the sides of driveways and roadsides.

Vertical & Horizontal Spacing

Vertical:

Large trees don't need to be removed as long as the plants beneath them are removed. Remove limbs to at least 6' to 10' from the ground to eliminate a vertical ladder fuel.

Shrub Example: a 5' shrub is growing near a tree. 3 x 5 = 15' of clearance needed between the top of a shrub and the lowest tree branch.

Horizontal (slopes):

Flat to mild slope (less than 20%): Trees should have a minimum of 10 feet between trees. Shrubs 2x height between other shrubs.

Mild to Moderate (20-40%): Trees should have a minimum of 20 feet. Shrubs should have a minimum of 4x height between other shrubs.

HAZARD INSPECTIONS BEGIN MAY 15. DEFENSIBLE SPACE IS REQUIRED BY LAW!

All properties in Wildland-Urban Interface (WUI) areas are required to maintain Defensible Space at all times during fire season. Please complete Defensible Space no later than June 30th, and maintain regularly. Fire personnel will visit properties beginning July 1st, and may leave notices if violations are found. Defensible Space is required by law, even if you do not receive a violation notice. Violation notices must be corrected within 30 days.

Wildfire Preparedness Checklist

See additional requirements on reverse side

Defensible Space

- 100' (or to your property line) of Defensible Space is required by law. Additional space may be required on larger properties.
- Create a buffer zone around your home by removing grass, weeds, brush and all dead vegetation.
- Create space between plants; limb trees 6'-10' above ground.

Evacuation, Including Roads and Driveways

- Owners are responsible to maintain vegetation on their property to keep roads, driveways, and routes clear!
- Emergency vehicles need 12' width and 14' vertical clearance.
- Coordinate and help neighbors, especially elderly and disabled.
- Leave immediately when ordered, or if you feel unsafe.

Hardening your home, Be Ember Aware!

- Make an ember resistant home with design and materials.
- Keep balconies and decks clean. Embers will ignite debris, combustible surfaces, and undersides of decks.
- Roofs are the most vulnerable surface where embers can land. Use gutter guards and keep free of leaves and needles at all times.
- Embers enter the attic and crawlspaces through vents. Screen vents with baffles 1/8" or smaller wire mesh.
- Seal gaps with weather stripping or caulk to keep embers out.

Ready, Set, Go

EVACUATION PREPAREDNESS

PREPARE AND LEAVE EARLY

Preparing and evacuating early may mean the difference between life and death. Assemble a "Go Kit," and train your family in advance. Act early when a fire strikes!

Evacuation Process

Monitor radio, TV, and phones for evacuation notices. Leave immediately when evacuation is ordered or if you feel unsafe. Wear long clothes (cotton or wool is best even if it's hot out!), sturdy shoes, and gloves. Wear goggles, an N95 respirator (available at hardware stores for less than \$5), and cover face with a bandana.

Evacuate by car with windows rolled up, vents closed, lights on. Stay in your car, avoid fire roads and hillsides. Drive downhill, away from the fire if possible. Evacuating on foot should be a last resort. Keep sturdy shoes and a flashlight near your bed in case of evacuation at night.

Pets and Animals

Place pets in carriers or on leash at the first sign of fire. Keep them by the front door with food and water.

Microchip all pets. Large animals require additional pre-planning and time.

WILDFIRE & EMERGENCY "GO KIT"

Put together your emergency supply kit in advance and keep it easily accessible. Plan to be away from your home for an extended period of time. Each person should have their own Go Kit. Backpacks work great for storing these items.

- Bandana, N95 respirator, goggles, leather gloves
- Water bottles and food
- Map marked with two evacuation routes (if possible)
- Prescription medications
- Change of clothing
- Extra eyeglasses or contact lenses
- Extra set of car keys, credit cards, cash
- First aid kit
- Flashlight and headlamp with spare batteries
- Battery-powered radio and extra batteries
- Sanitation supplies
- Copies of important docs (birth certificates, passports, insurance policies, etc)
- Pet food and water, leashes, pet supplies and medications
- Spare chargers for cell phones, lap tops, etc.

Items to take only if time allows:

- Easily carried valuables
- Family photos and other irreplaceable items
- Personal data and digital information backups on hard drives and/or disks

RICHMOND FIRE DEPARTMENT

WILDFIRE IS COMING...ARE YOU READY? DEADLINE IS JUNE 30TH

This notice relates to the property located at:

FIRE HAZARDOUS PLANTS

Certain shrubs and trees, like junipers, cypress, pampas/jubata grass, bamboo, acacia, arborvitae, black sage, and many conifer trees are very flammable and they should be removed and replaced with fire resistant varieties.

RICHMOND FIRE DEPARTMENT

440 CIVIC CENTER PLAZA
RICHMOND, CA 94804
<http://www.ci.richmond.ca.us/75/Fire-Department>

nixle

3 WAYS TO SIGN-UP

- Text your zip code to 888777
- Online at www.nixle.com
- Download Nixle Mobile App