



Conservation and Natural Resources
Richmond General Plan 2030



Community Vision

Richmond, California in 2030

Richmond values and protects its abundant natural resources—open spaces, wetlands, baylands, creeks and riparian systems and plant and wildlife communities. Restoration efforts have enriched native plant communities and wildlife habitats, and improved water and soil quality. Restored creeks collect and filter stormwater, provide urban refuge and link open space from the hills to the Bay along creekside trails. Richmond's open space supports a range of passive and active recreation for all. The surrounding hills and San Francisco Bay remain prominent character-defining resources, contributing to the community's image and identity with beautiful scenic backdrops, environmental sanctuaries and recreational opportunities.

Richmond promotes sustainability as a core value and operating principle. Critical natural resources are protected, conserved and improved through development standards and best management practices involving smart land use, innovative design and collaborative planning. Strong City leadership, environmental education and community stewardship ensure preservation and sustainability of open space and vital natural resources.



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Conservation, Natural Resources and Open Space

A healthy natural environment contributes directly to a City's quality of life. By improving environmental quality, Richmond will ensure that its abundant natural resources are sustained and the quality of life within Richmond is improved. The City is making dramatic strides to protect open space, restore natural habitats and promote broad-ranging conservation practices.

The Conservation, Natural Resources and Open Space Element:

- Describes the status of conservation, natural resources and open space in Richmond;
- Highlights key findings and recommendations based on an analysis of existing conditions;
- Defines goals for promoting natural resource conservation and ecological sustainability;
- Identifies policies and implementing actions to balance protection and conservation of natural resources with responsible development;
- Provides a summary table identifying lead responsibilities for each implementing action; and
- Reviews the existing regulatory framework that guides conservation, natural resource and open space planning efforts.

Purpose of the Element

The Conservation, Natural Resources and Open Space Element describes how the City of Richmond will sustain a healthy network of open space and natural resources for today's residents and future generations. It aims to protect, maintain and enhance its natural resources and open spaces, and balance current community resource needs with critical conservation endeavors. Goals, policies and actions in this Element will foster the preservation of Richmond's many valuable natural resources including wildlife and plant communities, air, water, soils, minerals, energy, open space and scenic views.

Legal Requirement

The State of California requires that general plans include a conservation element to address issues related to conservation, development and utilization of natural resources (Code Section 65302d).¹ In Richmond these resources include water, forests, plants and wildlife, soils, minerals, energy, creeks and harbors. In addition, California requires an open space element that contains goals and policies concerned with managing all open space, undeveloped lands and outdoor recreation areas including open space used for the preservation of natural



Richmond aims to sustain a healthy network of open space and natural resources for today's residents as well as future generations.

resources, managed production of resources, outdoor recreation and land left undeveloped for public health and safety reasons (Code Section 65302e).¹ The Richmond General Plan combines these closely related topics in this Conservation, Natural Resources and Open Space Element.



Richmond Today

Richmond is located along the northeast portion of San Francisco Bay and the southeast side of San Pablo Bay. The City has more than 32 miles of shoreline that serves as the City's border to the north, west and south. Marshes, mudflats and wetlands are located throughout the shoreline.

To the north and northeast, Richmond is bounded by the Berkeley Hills, San Pablo Ridge and Sobrante Ridge as well as unincorporated communities. This network of open space, hills and shoreline is rich with flora, fauna and natural resources. The City also supports forested, creek and riparian areas and a variety of other natural areas that are integral to Central Richmond, industrial areas and residential neighborhoods.

Each component of the natural environment is interrelated and sustains a diverse range of species, habitats and recreational opportunities. These resources are vital to the City and surrounding region because they provide a biologically diverse environment for people.

Open Space

Open space includes areas of land or water that are unimproved and are designated in a local, regional or state open space plan for open space use. Open space areas also include:

- Land for the preservation of natural resources;
- Space for outdoor recreation; and



Richmond's hillsides provide views of the City, areas for hiking and habitat for local plants and wildlife.

- Space left unimproved to protect public health and safety including fault zones and flood plains.

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, in addition to the waters of San Francisco and San Pablo Bays and their associated channels and harbors. Richmond enjoys more than 3,300 acres of regional and state parklands located along the shoreline and in the East Bay hills, and 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. Open space as it relates to parks, recreation and trails is further discussed in the Parks and Recreation Element.

Hillsides and Scenic Resources

Surrounding hills and the San Francisco and San Pablo bays are prominent scenic areas in Richmond.

The hills and bays are integral to the community's image and identity, providing beautiful scenic backdrops, environmental sanctuaries and recreational resources. The City is bounded by the Berkeley Hills, San Pablo Ridge, Sobrante Ridge and Point Richmond. These hills sustain a rich environment for native plant and wildlife species and create continuous wildlife corridors.

The hill areas provide for water infiltration and vegetation which helps moderate the urban heat island effect. In addition, local foothills provide publicly accessible trails and vistas for enjoying nature, viewing the bays, nearby bridges and surrounding cities. Richmond actively protects its hills and ridges and associated natural features through a Hillside Ordinance.²



Open space and wetlands located along Richmond's shoreline provide important natural habitat.

Wetlands, Baylands and Riparian Corridors

Wetlands

Wetlands are a valuable natural resource, providing habitat for wildlife and retention areas for both storm and flood waters, and natural groundwater recharge and filtration.³ Wetlands have important ecological functions in supporting unique assemblages of specially adapted plants and wildlife that depend on wetlands for survival.

The National Wetlands Inventory of the United States Fish and Wildlife Service contains records of seasonal wetlands within the City. Due to the City's development pattern, these features are mostly restricted to areas within industrial buffer areas such as the San Pablo Peninsula, on private property and on parks including the Point Pinole Regional Shoreline.

Baylands and Marshes

Baylands provide a vital and important ecosystem to the Bay Area and Richmond in particular. With more than 32 miles of shoreline, the baylands in Richmond are made up of diverse tidal areas such as marshes, mudflats, seasonal wetlands, rocky shores and beaches. These areas are a valuable resource for recreation, open space and habitat. Significant baylands within Richmond include Hoffman Marsh, Stege Marsh, Whittel Marsh and various unnamed tidal mudflats.

Creeks and Riparian Systems

Creeks and riparian systems are important to local wildlife, not only for the habitat they provide, but for the connectivity they create between otherwise isolated areas of wildlife habitat, acting as corridors through which wildlife species can migrate. Creeks play other important roles in Richmond's ecosystem by storing and filtering sediment and nutrients, recharging groundwater aquifers and reducing

flood potential. For residents, restored urban creeks provide a valuable connection to natural areas and create opportunities for recreation, education and awareness.

Wildcat Creek, San Pablo Creek, Castro Creek (Castro Cove), Cerrito Creek, Baxter Creek, Rheem Creek and Garrity Creek cross the City boundaries and eventually drain into the San Francisco and San Pablo bays. All include portions that have been channelized, lined with concrete and maintained such that riparian and marsh vegetation is generally cleared annually.

The United States Environmental Protection Agency lists Wildcat Creek and San Pablo Creek as impaired water bodies due to their high levels of pesticide residue.⁴ Riparian habitat is located along portions of creeks that have been preserved or restored including Wildcat Creek, Rheem Creek, San Pablo Creek and Baxter Creek. These areas provide food, cover and breeding sites for wildlife proximate to a water source. In addition, these restored creeks and riparian habitat may accommodate floodwater for groundwater recharge and stormwater management (see Map 7.1: Floodplains and Watersheds). The Contra Costa County Flood Control and Water Conservation District operates and maintains the Wildcat Creek, San Pablo Creek and Rheem Creek flood control channels.

Plants and Wildlife

Biological Communities

Healthy plant communities promote soil and slope stability, help maintain water quality and support



Special Status Plant and Wildlife in Richmond



The City enjoys abundant natural resources with vast open spaces, wetlands, baylands, a network of creeks and riparian systems, and rich plant and wildlife communities. Richmond residents are also part of this interconnected ecosystem, and as such must carefully plan for a sustainable human-nature interface. Crucial to the long-term health of the community is the need to balance protection of natural lands, habitat and sensitive species with the need to accommodate appropriate development. Policies included in the General Plan are intended to support a comprehensive approach to conservation and management of multiple species.

There are a number of **special status plant species** located in Richmond including:

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|---------------------|--------------------------|---------------------|
| 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:

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



critical habitat for wildlife and fish. Native species provide particularly important functions to the community. They are best suited to the local climate and soil conditions and tend to be drought-tolerant or water conserving, pest or disease resistant and sometimes fire resistant. Conversely, non-native plants can be detrimental to the local ecology and economy. Some are invasive; they can proliferate rapidly thereby reducing native habitat, crowding out ecologically important species, consuming groundwater and increasing fire danger.

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.⁵ 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.

Urban Forest

Urban forests yield numerous benefits to the ecosystem by: reducing local or neighborhood temperature; absorbing pollutants; removing and storing atmospheric carbon; softening noise; providing habitat for birds and other creatures; and improving overall air quality. Richmond's urban forest provides rich biological communities largely along its shoreline and in open space areas.

Richmond is home to many native and heritage trees, many of which are large specimen trees repre-

senting 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.

Air, Water and Energy Resources

Air Quality

Air pollution is generally divided into categories based on sources which generate it. Air pollution within Richmond is generated by stationary, area-wide and mobile sources. Stationary sources include both point and area sources. Point source emissions occur at specific locations and are usually associated with manufacturing and industry.

Examples of air emission point sources are boilers and combustion equipment that produce electricity or generate heat. Area-wide sources consist of many smaller point sources that are widely distributed. Examples of area-wide sources include residential and commercial water heaters, painting operations, wood-burning fireplaces, lawn mowers, agricultural fields, landfills and consumer products such as barbecue lighter fluid and hair spray.

Mobile sources include emissions from motor vehicles including tailpipe and evaporative emissions. Natural sources can also generate air pollutants such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

Because of its proximity to the Golden Gate and the location of the East Bay Hills to the east, Richmond is subject to windy conditions and often cooled by

heavy fog during the summer months. The City's air quality is generally better than in other areas of the Bay Area. Winds blow in a northeasterly direction and carry fog in through the Golden Gate and through the Carquinez Strait.

Energy Consumption

Growing national and global concern over environmental degradation, climate change and the stability of energy supplies provide the impetus for public policy on energy efficiency and emissions control.

Within Richmond as in most urban areas, fossil fuels are the number one source of energy consumed by residents, government, industry and commercial activities. Transportation fleets are the single largest consumer of fossil fuels followed by buildings that use large amounts of energy for heating and cooling.

The City of Richmond is dedicated to using energy more efficiently, reducing greenhouse gas emissions and mitigating the potential affects of climate change.

Water Quality and Urban and Stormwater Runoff

The quality of water affects the health of wildlife, natural habitat and residents. Most water pollution comes from untreated water that runs over the land such as streets, yards and parking lots and drains into creeks, marshes and into the San Francisco Bay. Runoff pollutants include heavy metals, excessive sediment, petroleum hydrocarbons, domestic sewage, pesticides, excessive nutrients, trash and pollutants that are persistent in the environment such as



Water Quality: A Federal, State and Local Priority



The Clean Water Act is the primary federal law governing water quality in creeks, rivers, lakes and coastal oceans. Its purpose is to protect human health and enhance beneficial uses of water such as aquatic life, fisheries, drinking water, recreation and agriculture, among others. The United States Environmental Protection Agency (EPA), in partnership with State EPAs, manages the National Pollutant Discharge Elimination System (NPDES), which regulates what substances can go into waterways. NPDES specifically prohibits pollutants carried in a storm drain system that cause or contribute to violating clean water standards in both dry and rainy weather. The EPA has determined a maximum amount of various pollutants that can go into water and still meet water quality standards.

California has a number of regional water quality control boards that regulate and enforce clean water at the local level. These boards in addition to individual cities and unincorporated areas have an important responsibility to protect clean water. Key approaches to meeting mandated standards, improving water quality water quality and managing runoff involve:



Natural infiltration and groundwater recharge help improve water quality of creeks and bays.

- Multi-objective water quality solutions such as incorporating natural filtration and groundwater recharge, parks and green infrastructure, open space, and riparian and aquatic habitat restoration;
- Stormwater retention alternatives to allow stormwater to naturally filter into the ground for recharge;
- The incorporation of vegetated swales, buffers and infiltration areas in new development and permeable materials in the design of sidewalks, roads and driveways; and
- Multi-jurisdictional partnerships among the City, County and Regional Water Quality Board as well as local coalitions, working together to develop cost-effective solutions to clean up creeks, the shoreline, bay and ocean.



Polychlorinated Bi-phenols and Polycyclic Aromatic Hydrocarbons.

Urban runoff is caused by activities such as overwatering of lawns, washing cars in driveways and hosing down driveways. As water washes over parking lots, streets, and chemically fertilized lawns, it picks up pollutants. Because the volume of water is small, the pollutants it carries are highly concentrated. Stormwater runoff occurs when it rains. Rain falls and large volumes of water flow over the land and into the storm drain system carrying the same pollutants picked up through urban runoff; however, since there is more water when it rains, the pollutants are less concentrated.

In urban areas a large percentage of the land is covered with structures and pavement. Underlying soil does not have the ability to filter or biodegrade contaminants the way natural soils and permeable surfaces do. As the water transports pollutants within the watershed system, it pollutes streams, the bay and ocean.

Federal, state and local regulations protect water quality, recharge areas and the overall watershed. In particular, the State Regional Water Quality Control Board mandates control of urban runoff to reduce the percolation of pollutants from surface runoff into groundwater supplies. At the local level, Richmond has implementation and reporting requirements that include prohibition of non-stormwater discharges; receiving water limitations; requirements for businesses and residents to use best management practices; and stringent requirements for new development and redevelopment. Richmond



Stormwater runoff can be naturally filtered by using permeable pavers or by draining to landscaped areas as shown above.

intends to continue complying with the National Pollution Discharge Elimination System (NPDES) requirements and implementing best management practices involving smart land use, innovative design and collaborative planning including low-impact development concepts.

Watershed Protection

The majority of water drains into common streams, creeks, storm drains or spreading grounds within a watershed. Watershed boundaries are defined by ridgelines or high elevation areas since water follows the topography of the land, moving from high to low points by force of gravity. Watersheds support a number of critical life functions – they supply drinking water, support habitat areas for plants and animals, provide areas of natural beauty and water bodies for recreation, reduce flood potential and prevent erosion.

In West Contra Costa County a number of watersheds drain from the El Cerrito/Kensington Hills and San Pablo Ridge westward towards Richmond. Primary watersheds in the vicinity are San Pablo, Garrity, Rheem, Wildcat, Baxter and Cerrito. Since watersheds are not defined by political boundaries, their protection relies on cooperation among jurisdictions. Working together, regional stakeholders can protect and restore both community and watershed health since natural and human communities are inextricably linked, and the sustainability of both is interdependent. Richmond will continue to sustain long-term health through integrated watershed management strategies.

Soils and Minerals

Soils

Soils are naturally occurring complexes of silt, sand, clay, minerals and organic materials. Soils constitute the foundation for vegetation and wild-



Integrated Watershed Management

Integrated watershed management is a collaborative approach to sustaining healthy watersheds. The integrated approach extends beyond political boundaries, relying on partnerships between cities, counties, state and federal agencies to achieve mutual goals. Integrated watershed management may encompass a range of interconnected strategies including the following:

- Water quality protection and improvement;
- Flood management;
- Stormwater capture and management;
- Water recycling and conservation;
- Ecosystem restoration, habitat protection and improvement; and
- Recreation and public access.

life and are also important for urban development. Soil also affects runoff and infiltration patterns. Soil, water and plants form a complex interrelationship—disturbing the soil can have far-reaching ecological effects. Erosion refers to the wearing away of land by running water, wind or other agents. Vegetation, both living and non-living, protects soils from erosion and decreases the rate of this natural process. Excessive erosion is the basic soil conservation problem. Gullied hillsides and silt-choked streams are the result of soil mismanagement. Topsoil preservation is vital for working landscapes.

Soil types found in Richmond include: Tierra Loam, Millsholm Loam, Los Osos Clay Loam and Clear Lake Clay.⁷ The predominant drainage class of these soils, which is a measure of the expected natural frequency and duration of wet periods, are moderately well drained or better.

In most areas of Richmond the groundwater infiltration rate is slow or very slow.⁶ Drainage in areas of the City outside of the Bay Plain area is relatively rapid due to steep topography, which is also a contributing factor to surface runoff. Soils classified as poorly drained (Clear Lake Clay) are found in the Bay Plain portion of the City which overlaps with those areas that are the most urbanized in Richmond.

The generally fine-grained nature of the clay and loam soils in Richmond tends to retard percolation into the water table, but the underlying sediments contain sufficient medium to coarse-grained material to permit limited infiltration into the underground aquifer, particularly along the pervious channels of the City's many creeks.⁷

Soil contamination is a concern especially in areas where industrial and commercial uses have historically been concentrated. Such uses have been primarily focused in Central Richmond and along the shoreline. Most of Richmond's known contaminated and hazardous sites are located in the industrial zone south of Interstate 580 and west of the Richmond Parkway. About 1,050 acres in 41 parcels in Richmond are recognized by the California Department of Toxic Substances as contaminated

sites and 11 point source locations of hazardous materials are recognized by the City of Richmond.

Mineral Extraction

Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil-bearing rock, but excluding geothermal resources, natural gas and petroleum. Rock, sand, gravel and earth are also considered minerals when extracted by surface mining operations.⁸

Mineral production in Richmond has been largely limited to sand, gravel and rock products. Mining for manganese, crude oil and clay was at one time undertaken for the area. Mining for sandstone and crushed rock was until recently limited to one quarry on Canal Boulevard near the Port of Richmond and another at Point Molate. The Canal Boulevard quarry has been closed and remediated. The Point Molate quarry is focused on recycling and handling operations rather than extraction. No quarry operations are anticipated in the future.



Key Findings and Recommendations

There are numerous opportunities for Richmond to improve environmental quality, sustain a healthy network of open spaces and balance community resource needs with conservation efforts. The City contains wetlands, baylands, marshes, creeks and riparian habitat, hillsides and forested areas that are biologically diverse with many special status native plant and wildlife species.

Richmond supports a network of trails, greenways and parklands with thousands of acres of regional and state parklands located along the shoreline and in the East Bay hills and more than 250 acres of City-owned urban parks integrated throughout the City. A critical priority is to preserve and maintain these valuable open spaces and natural resources, working closely with regional stakeholders and the East Bay Regional Park District.

Air, water and soil quality affect the health of wildlife, natural habitat and residents alike. Best management practices involving smart land use, innovative design and collaborative planning will help maintain the health of these vital resources. Furthermore, clean-up of contaminated sites and energy efficiency are important factors in maintaining long-term environmental sustainability.

The following key findings and recommendations are derived from the existing conditions in Richmond as well as the community's vision for the future:



Access to open space and natural habitat enhances public enjoyment and strengthens ongoing support for conservation.

Finding 1: Many of the natural resources in the City are preserved, but some sensitive areas such as wetlands, baylands, marshes, creeks and riparian areas need to be protected and restored.

Particularly along the shoreline and in the hills, there are undeveloped areas that contain sensitive natural habitats which should be preserved and restored. Some natural habitat and open space areas have been disturbed by erosion, spread of invasive species, toxic contamination or other human activi-

ties. These areas will benefit from focused reclamation and restoration activities.

Over the years many of Richmond's natural creeks have been channeled underground. Daylighting and restoring these creeks will provide opportunities to create green streets, manage stormwater and connect open spaces via creekside multi-use trails as part of the City's green network. Means of protecting and restoring the City's natural resources include:



- Restricting development on sensitive natural resources;
- Identifying setbacks for development adjacent to natural resources; and
- Facilitating the restoration of creeks currently in culverts or hardened channels.

Finding 2: Richmond has a variety of parks and open space areas, however there is a need to improve access to some areas along the shoreline and in the hills.

Richmond's broad range of open spaces and network of parklands should be managed to ensure sustainability and enjoyment for future generations. Richmond can preserve and maintain open space by:

- Improving access to open spaces to enhance public enjoyment and strengthen ongoing support for open space preservation;
- Enhancing natural and cultural resources along the shoreline; and
- Ensuring adequate design review to protect natural topography.

Finding 3: The City is making efforts to improve water quality in creeks and Bays, but stormwater runoff and long-term viability of the watersheds remains a concern.

Federal, state and local regulations protect water quality, recharge areas and the overall watershed. To meet these regulations, the City is continually evolving and adapting best management practices.

Ways to reduce impacts from urban and stormwater runoff include:

- Integrating stormwater management techniques to minimize runoff;
- Encouraging water conservation efforts by residents, businesses and industry.
- Working with regional stakeholders to protect and restore watershed viability and protect the health of wildlife and natural habitat; and
- Creating an integrated watershed management approach and best management practices aligned with local, state and federal priorities.

Finding 4: Existing land uses and traffic impact air quality in the region.

Poor air quality affects the health of wildlife, natural habitat and Richmond residents. State-of-the-art techniques and best management practices involving smart land use, innovative design and collaborative planning will help protect air resources. Air quality can be improved by:

- Utilizing tools to reduce air pollution from stationary and non-stationary sources; and
- Participating in regional planning efforts with surrounding jurisdictions and the air quality district.

Finding 5: Richmond can make a significant contribution to improving environmental sustainability and minimizing impacts of climate change through local action.

Energy conservation and efficiency, green buildings and waste reduction can help decrease dependency

on outside energy sources and help maintain long-term sustainability. Energy conservation and environmental sustainability strategies include:

- Recycling, alternative energy programs, new energy technologies and sustainable building practices to help reduce Richmond's carbon footprint (see also the Energy and Climate Change Element); and
- Minimizing the City's waste stream and promoting recycling and composting.

Finding 6: Contaminated sites in Richmond should be remediated.

Remediating contaminated and brownfield sites will improve environmental quality and maximize opportunities to develop new uses. With careful assessment and remediation, underutilized brownfields may provide opportunities for new development and potential locations for much needed amenities such as parks or community gardens. Steps in creating a healthy urban environment include:

- Remediating toxic and contaminated sites; and
- Avoiding future contamination by adopting standards for controlling the use of hazardous substances and preventing further pollution.



Goals

GOAL CN1:

Preserved and Restored Natural Habitat and Biodiversity

Continue to preserve and restore natural habitat and associated plants and wildlife including wetlands, baylands, riparian areas, oak woodlands and other sensitive biological resources. Take restoration efforts such as controlling invasive species, re-establishing natives, daylighting creeks and reclaiming priority conservation areas in order to maintaining critical habitat and biodiversity. Carefully balance natural lands, habitat and protection of multiple species with the need to accommodate development.

GOAL CN2:

Conserved Open Space

Conserve open space to ensure that Richmond's expansive shoreline, network of parklands, trails, hillsides and undeveloped natural areas remain viable in supporting biological communities and providing sanctuary for future generations. Conserve open space, expand public access to open space, where appropriate, and acquire additional lands where feasible. Continue to protect surrounding hills and viewsheds as character-defining features that provide scenic backdrops, as well as publicly accessible trails and vistas.

GOAL CN3:

Improved Water Quality

Pursue a multi-jurisdictional approach to protecting, maintaining and improving water quality and the overall health of the watershed. A comprehensive, integrated approach will ensure compliance with federal and state standards, and address a range of interconnected priorities including: water quality and runoff; stormwater capture, storage and flood management techniques that focus on natural drainage; natural filtration and groundwater recharge through green infrastructure and habitat restoration; and water recycling and conservation.

GOAL CN4:

Improved Air Quality

Take steps to improve and maintain air quality for the benefit the health and vitality of residents and the local economy. In alignment with state emission reduction goals and in cooperation with the Bay Area Air Quality Management District, pursue regional collaboration to reduce emissions from all sources.



GOAL CN5:

Environmental Sustainability

Reduce the City's carbon footprint and manage resources wisely to meet the needs of a growing population and economy. Base community planning decisions on sustainable practices that reduce environmental pollutants, conserve resources and minimize waste. Lead the Bay Area in reducing dependence on fossil fuels by encouraging design of energy efficient buildings, using renewable energy and promoting alternative methods of transportation.

GOAL CN6:

A Healthy Urban Environment

Elevate the quality of urban areas to support human development and provide residents with a healthy urban environment. Remediate contaminated soil and brownfield sites and properly manage mineral resource sites in order to contribute to improved public health and maximize opportunities to develop new uses. Enhance the natural beauty of the area by promoting design that respects landscape context, restoration of urban creeks, creation of green streets and stewardship of the urban forest.



Policies and Implementing Actions

A range of policies and implementing actions are outlined below in relation to each of the goals. These policies mandate, encourage or allow certain actions to be pursued throughout the duration of the General Plan. Together they serve as strategic directions for City staff and partners, highlighting where time and resources should be focused.

Each policy may either be correlated with a number of actions, or simply a single key implementing action. Conversely, some actions may support a range of policies. The policies and implementing actions are organized in two parts. First, all goal-related policies are described and each policy description is followed by a list of its associated implementing actions. Then, implementing actions are described in greater detail in the following section.



GOAL CN1

Preserved and Restored Natural Habitat and Biodiversity

Policy CN1.1

Habitat and Biological Resources Protection and Restoration

Natural habitat is essential to ensuring biodiversity and protecting sensitive biological resources. Protect these areas and work with the California Department of Fish and Game, the San Francisco Bay Regional Water Quality Control Board, the East Bay Regional Park District and other regional agencies to identify areas for special protection and establish appropriate protection measures for these areas.

Protect resources to maximize the efficacy of natural systems and encourage sustainable development practices and conservation measures to ensure a healthy natural environment.

Protect wetlands from direct and indirect impacts of new and existing development and infrastructure. Ensure that direct and indirect impacts to wetland habitats are minimized by environmentally sensitive project siting and design.

Protect marshlands and baylands to ensure they are not polluted or damaged from bay filling and dredging.

Protect and restore creek corridors and riparian areas to ensure they function as healthy wildlife habitat and biological areas. Protect and restore creek corridors and riparian areas by restoring riparian habitat with appropriate vegetation and channel design; removing culverts and hardened channels where appropriate; improving creek access; avoiding future culverting or channelization of creeks; and ensuring appropriate and ongoing maintenance.

At a minimum, require mitigation of impacts to sensitive species ensuring that a project does not contribute to the decline of the affected species populations in the region. Identify mitigations in coordination with the U.S. Fish and Wildlife service, the California Department of Fish and Game and other regulatory agencies.

See also: LU4.3; EC6.1; HW9.7

Policy CN1.2

Local Native Plant Species

Promote the use of locally propagated native plant and tree species and remove and control the spread of invasive exotic plant species. Promote and protect native plant species in natural areas as well as in public landscaping of parks, schools, medians and planter strips. Work closely with landowners, landscapers and nurseries to remove and prevent the spread of invasive exotic plant species.



GOAL CN1

Preserved and Restored Natural Habitat and Biodiversity

Policy CN1.3

Urban Creek Restoration

Encourage the restoration of urban creeks and coordinate with property owners and local interest groups in the restoration efforts. Daylighting of creeks that are currently in culverts or hardened channels shall be pursued where feasible in new and redevelopment projects.

See also: HW9.5



GOAL CN1

Preserved and Restored Natural Habitat and Biodiversity

Action CN1.A

Habitat Conservation

Work closely with Contra Costa County, the East Bay Chapter of the California Native Plant Society (CNPS), and the East Bay Regional Park district to develop habitat conservation plans. Ensure that these plans identify locations and protect sensitive habitat including wetlands, marshes, baylands, creeks and open space. The plans should also establish clear mitigation criteria including no net losses in natural resource acreage, functions or values. The plan should provide for safe wildlife movement by limiting roadways within habitat areas, creating wildlife passable fencing for existing roadways, incorporating design features and by creating habitat preserves that are immediately adjacent to each other.

See also: LU4.C; HW9.P

Action CN1.B

Priority Conservation Areas

The City will identify areas of the City with significant natural habitat, open space and recreation resources and promote conservation, preservation and environmental rehabilitation.

Action CN1.C

Creek Access Easement

Identify and create access easements, where practical, for creek maintenance and public access to creekside amenities. Establish standards that allow public access in the floodplain and buffers along creek corridors without compromising the integrity of sensitive habitats.



GOAL CN1

Preserved and Restored Natural Habitat and Biodiversity

Action CN1.D

Creek Corridor Performance Standards

Establish performance standards for creek corridors that accomplish the following:

- Offer sufficient width in and/or adjacent to preserves to allow for existing and created wildlife habitat, species sensitive to human disturbance, vegetative filtration for water quality, corridors for wildlife habitat linkage, protection from runoff, and other impacts of adjacent urban uses;
- Allow for sufficient width adjacent to natural resource preserves to allow for trails and greenbelts; and
- Discourage the use of herbicides and provide sufficient width for a mowed firebreak (where necessary), adjacent passive recreation uses and access for channel maintenance and flood control.
- In areas of creek restoration, implement design specifications and modeled flow conditions to ensure that creek channel configuration and vegetation would withstand storm flows, that conveyance capacity is not impeded, and that the system is stabilized following construction. Design shall be conducted by a certified professional in stream restoration and fluvial geomorphology processes.
- Implement construction best management practices to reduce erosion potential including, but not limited to, construction scheduled for dry season work; high flow bypass until the system is stabilized; temporary and permanent erosion and sediment controls; prevention of run-off during construction.
- Implement monitoring, inspection, and maintenance programs and plans to ensure long-term continued function.

Action CN1.E

Habitat Restoration

Work with other jurisdictions, public and private property owners to restore sensitive habitat that has been degraded, but has potential for rehabilitation including brownfield and contaminated sites. Seek funding opportunities from state and federal agencies and from nonprofit foundations for restoration and remediation work.

See also: HW9.Q; EC6.B

Action CN1.F

Special Status Species Protection Methods

Implement the special status survey methods of the California Department of Fish and Game, U.S. Fish and Wildlife Service, Contra Costa County Department of Agriculture and CEQA requirements.



GOAL CN1

Preserved and Restored Natural Habitat and Biodiversity

Action CN1.G

Landscape Design Guidelines

- Update and implement the City’s Landscape Design and Development Guidelines to conform to bay friendly landscape standards.
- Use appropriate tree species and densities in buffer areas.
- Ensure that medians include native plants and trees and are wide enough to support their long-term viability with the least demand for irrigation and maintenance.
- Prioritize the use of locally propagated native drought-tolerant vegetation and discourage the use of invasive non-native species in home landscaping.
- Tree and other plant selections for public landscaping should be made in conformance with the “City of Richmond Urban Forest Management/Master Plan Reforestation Supplement” (Chapter 10.08 of the Richmond Municipal Code).
- Plants should be grouped together as per their water demand listed in the Water Use Classifications for the Landscape Species or “WUCOLS III,” or successor document by the University of California Cooperative Extension for the California Department of Water Resource.

See also: EC4.G

Action CN1.H

Urban Creek Restoration

Where feasible, restore creek corridors in urban areas. Creeks currently diverted in culverts or hardened channels should be restored to their natural state. Adopt regional guidelines for channel creation or modification to ensure that channels meander, have a naturalized side slope and a varied channel bottom elevation. Include improvement standards for soft bottom channels.

See also: EC6.C; PR3.C; HW9.N



GOAL CN2 Conserved Open Space

Policy CN2.1

Open Space and Conservation Areas

Preserve open space areas along the shoreline, creeks, and in the hills to protect natural habitat and maintain the integrity of hill-sides, creeks and wetlands. Protect existing open space, agricultural lands and parks.

See also: LU4.2; HW9.6

Policy CN2.2

Richmond Shoreline

Minimize the impacts of development on the shoreline with special attention to intensity, density, and proximity to the water. Conserve, protect and enhance natural and cultural resources along the Richmond shoreline. Promote a balance of uses along the shoreline that supports multiple community needs such as economic development, recreation, historic preservation and natural resource protection.

- Provide a mix of residential and recreation uses in the Southern Gateway change area; support an active industrial waterfront around the Port and along the Santa Fe Channel; and promote a cultural heritage shoreline west of the Port.
- Protect and restore wetlands, native habitats and open space; develop shoreline parks and trails to increase public access; encourage recreation and tourism activities; and enhance and showcase historic and cultural resources. Prepare, adopt, and implement plans that will protect natural and built environments from adverse potential impacts of sea level rise due to climate change.

See also: LU4.1

Policy CN2.3

Natural Topography and Hillside Protection

Protect natural topography to preserve and enhance Richmond's natural beauty and require developers to concentrate residential development below the 400 foot elevation. The natural characteristics of the Berkeley Hills, San Pablo Ridge, El Sobrante Ridge, Point Potrero and San Pablo Peninsula should be protected and enhanced by regulating allowable methods of site preparation, grading, soils repair, foundation design and topographic alteration, as well as the height, color, material and siting of structures and roadways, quantities of cut and fill, placement of utility crossings and removal of vegetation.

Policy CN2.4

Agricultural Lands

Preserve agricultural lands for sustained crop production, grazing and farming. Encourage local organic food production such as microfarming in community gardens and private yards. Protect viable topsoils to ensure working landscapes.



GOAL CN2

Conserved Open Space

Policy CN2.5

Access to Large-Scale Natural Areas

Improve access to large-scale natural areas located in the City including regional parks along the shoreline and in the hills. These areas should be open for controlled access to improve public enjoyment and interpretation. Access should be limited where natural habitat is extremely sensitive. Work with transit agencies to improve connections and access to open space and recreation facilities from all Richmond neighborhoods.

See also: PR4.1; HW1.7

Policy CN2.6

Protect Soil and Reduce Erosion

Minimize soil depletion and erosion. Prevent erosion caused by construction activities. Retain natural vegetation and topography and minimize grading of hillsides.

Policy CN2.7

Parkland Preservation

Maintain high quality parklands and play areas to serve current and future residents. Require new development and redevelopment projects to provide additional parkland or funding to purchase and maintain parklands.

Policy CN2.8

Mineral Resources

Preserve mineral resources in undeveloped areas that have been classified by the State Mining and Geology Board as having state-wide or regional significance for possible future extraction. Avoid nuisances, hazards or adverse environmental, public health and safety impacts associated with mineral extraction by employing methods such as development setbacks, buffers, screening and other appropriate measures. In locations where mineral extraction is no longer a viable practice, provide environmentally sensitive remediation and reuse.



GOAL CN2 Conserved Open Space

Action CN2.A

Transfer of Development Rights Program

Develop a program that targets areas for Transfer of Development Rights (TDR) which exchange development privileges from natural areas to parts of the City with infill or redevelopment potential. Work closely with the City Attorney to develop the TDR program.

Action CN2.B

Open Space Easements

Consider opportunities for establishing open space easements where natural resources may be protected or accessed on private property. The City may accept or purchase easements from private landowners for open space and resource conservation.

Action CN2.C

Parkland Dedication Ordinance

Update the parkland dedication ordinance that requires new development and redevelopment projects to provide adequate park and recreation opportunities to maintain the 3.0 acres per 1,000 population standard in applicable planning areas through a combination of park types as defined in the Parks and Recreation Element (to be updated and refined in the parks master plan).

Update the park impact fee ordinance that requires new development and redevelopment projects to pay a fair share to cover the cost of parkland acquisition and improvement if the development is unable to provide adequate parkland within the project. Prioritize park dedication over impact fees. Perform a nexus study periodically to update the criteria and fees.

Include provisions that prevent a net loss of parklands in the City. Require at least a 1:1 replacement if there is any loss of public open space or parkland due to redevelopment.

See also: PR1.G; HW1.B

Action CN2.D

Open Space Plan

Develop and implement an open space plan to enhance public open space in the City. Include strategies for open space in the hills, along creeks and the shore-line, and in the urban core. Collaborate with the East Bay Regional Park district and the National Park Service to manage and maintain facilities and programs at regional and national parks.

See also: LU4.B; HW9.O; EC6.A



GOAL CN2

Conserved Open Space

Action CN2.E

Hillside Physical Constraint Area Ordinance

Continue to implement the Hillside Physical Constraint Area Ordinance, which prohibits large-scale redistribution of earth and alteration of topographic conditions on sloping sites.

Action CN2.F

Community Access and Mobility

Develop access and mobility criteria for capital improvement projects and new development to enhance physical access to community facilities, schools, parks, shoreline open spaces, historical destinations, commercial and employment centers and transit hubs. The criteria should address access by walking, bicycling and public transit as well as vehicular access.

The community access and mobility criteria should:

- Ensure safe connections to large and small open spaces, community facilities such as schools, community centers, recreational facilities, cultural and enrichment centers, historical destinations, transit hubs and commercial and employment centers;
- Address travel routes, infrastructure improvement needs and barriers such as roads, railroad lines, freeways, fences and natural features; and
- Provide bicycle and pedestrian-friendly routes including completion of major trails and pathways like the San Francisco Bay Trail and Richmond Greenway.

See also: CR2.A; PR1.A; HW4.A; EH3.D



GOAL CN2 Conserved Open Space

Action CN2.G

Sustainable Urban Agriculture Assessment

Work with non-profits and regulatory agencies to explore the potential for creating, expanding and sustaining local urban agriculture, including community gardens, orchards and farmers' markets. Urban agriculture has the potential to supplement the availability of fresh fruit and vegetables in the community, provide economic opportunities to Richmond residents, lower food costs, reduce overall energy consumption and build social cohesion.

The assessment could explore the feasibility of implementing the following strategies:

- Developing a site inventory and a management plan to administer the use of potential urban agricultural sites;
- Identifying adequate sites to expand the number and frequency of farmer's markets throughout Richmond;
- Promoting urban agriculture as a desirable civic activity that improves the quality of urban life, food security, neighborhood safety and environmental stewardship;
- Supporting the development of appropriate agriculture in residential, industrial, business and open space zones;
- Establishing a community-based support system for urban growers such as tool banks, shared processing facilities, farmers' markets, community supported agriculture ventures, funding streams and technical service providers;
- Offering locally grown food to local schools, hospitals, nursing homes, daycare centers, correction facilities and businesses such as restaurants, while creating economic opportunities for urban growers and related industries;
- Supporting WIC Farmers' Market Nutrition Program and the Senior Farmers' Market Nutrition Program that provide support for buying fresh produce at farmers' markets;
- Creating training programs for unemployed people to work in urban food-related businesses as a source of jobs;
- Working with representatives of community gardening and urban farming organizations to meet needs unique to urban farm enterprises;
- Ensuring long-term land commitment for community gardens, entrepreneurial farms and other urban agriculture ventures;
- Updating building codes to encourage rooftop gardening; and
- Developing school-based programs that integrate nutrition and gardening in order to raise awareness about the connection between healthy food choices and locally grown fresh produce.



GOAL CN2

Conserved Open Space

Action CN2.H

Specific Actions for the Point Isabel Area

- Preserve the wildlife value of the open water south of Brooks Island and between Brooks Island and Point Isabel by discouraging filling or dredging there.
- Initiate and carry through coordinated planning to provide public access at points along Richmond's southern shoreline, from Point Isabel to and including the Marina Bay.
- Require as a condition of development, provision of a pedestrian and bicycle link along the shoreline should any of the Point Isabel area shoreline be developed for other than park use. Develop incentives and controls for maintenance of private open space.
- Require the dedication of a trailheads at the ends of South 46th and South 32nd Streets as part of any plans to redevelop the lands adjacent to the existing University of California Field Station.
- Support the efforts of the East Bay Regional Parks District to establish an uninterrupted stretch of shoreline access within the Point Isabel area.
- Protect the hike/bike path from physical and visual intrusion by all forms of motorized vehicles to the greatest extent possible. Include motor vehicle access at Point Isabel, the University of California Field Station, Campus Bay and Marina Bay, with use of the trail itself restricted to pedestrians and bicyclists.
- Maintain specific view corridors as links between Richmond's most urbanized areas and the waterfront.
- Maintain the marsh and wetlands areas between Point Isabel and Marina Bay as a preservation area.
- Protect open water, mudflats and all tidelands to the maximum extent feasible. Discourage filling, dredging and all development that would have a significant adverse impact on the biological productivity or aesthetic character of the physical features of these areas. Any development which does adversely impact the biological productivity or aesthetic character of open water, marsh, mudflat or tideland should provide mitigation measures to offset the detrimental impact.
- Incorporate reasonable building height and siting adjustments into the comprehensive update of the Zoning Ordinance to protect existing view corridors of the Bay.



GOAL CN3 Improved Water Quality

Policy CN3.1

Stormwater Management

Develop strategies to promote stormwater management techniques that minimize surface water runoff in public and private developments. Utilize low-impact development techniques to best manage stormwater through conservation, on-site filtration and water recycling.

Policy CN3.2

Water Quality

Work with public and private property owners to reduce stormwater runoff in urban areas to protect water quality in creeks, marshlands and water bodies and the bays. Promote the use of sustainable and green infrastructure design, construction and maintenance techniques on public and private lands to protect natural resources. Incorporate integrated watershed management techniques and to improve surface water and groundwater quality, protect habitat and improve public health by coordinating infrastructure and neighborhood planning and establishing best practices for reducing non-point runoff.

See also: HW9.3

Policy CN3.3

Flood Management

Minimize the flood hazard risks to people, property and the environment. Address potential damage from a 100-year flood, tsunami, sea level rise and seiche, and implement and maintain flood management measures in all creeks and in all watersheds.

See also: SN1.2

Policy CN3.4

Water Conservation

Promote water conservation. Encourage residents, public facilities, businesses and industry to conserve water especially during drought years. Work with East Bay Municipal Utility District to advance water recycling programs including using treated wastewater to irrigate parks, golf courses and roadway landscaping and by encouraging rainwater catchment and graywater usage techniques in buildings.

Policy CN3.5

Municipal Sewer System

Continue to modernize wastewater treatment facilities to avoid overflows of untreated sewage.



GOAL CN3

Improved Water Quality

Action CN3.A

NPDES Compliance and Permit

Continue to comply with the City's National Pollutant Discharge Elimination System (NPDES) Permit and continue to implement the following action steps:

- Maintain municipal infrastructure (sewer systems, roads, corporation yards, buildings) to reduce pollutants that flow into water courses;
- Require development to comply with the Contra Costa Clean Water Program Stormwater Guidebook;
- Work with developers to ensure compliance with the City's minimum standards and NPDES requirements;
- Encourage all projects to use pervious pavements, cluster structures, disconnect downspouts, minimize land disturbance and utilize micro- detention such as low impact development (LID);
- Require adequate source control measures to limit pollution generation in businesses including draining non-stormwater discharges such as swimming pools, trash and food compactor racks, vehicle outdoor storage, fire sprinkler test water and equipment washing;
- Require businesses that may be susceptible to polluting stormwater to implement best management practices (BMPs) including covering drains and storage precautions for outdoor material storage, loading docks, repair and maintenance bays and fueling areas;
- Inspect contamination sites to prevent illicit discharges;
- Inspect municipal storm drains to eliminate illicit discharges and prevent illegal dumping;
- Educate the public about stormwater pollution prevention methods and provide incentives for public participation;
- Adopt an integrated pest management (IPM) policy or ordinance and advocate IPM through public education;
- Manage waste generated from the cleaning and treating of copper architectural features including copper roofs; and
- Adopt a local ordinance for installing a sanitary sewer connection and prohibiting discharges of copper-based chemicals or other fungicides from pools, spas and fountains.

See also: HW9.L.



GOAL CN3 Improved Water Quality

Action CN3.B

Water Recycling

Support efforts by the regional water provider to increase water recycling by residents, businesses and developers. Require water recycling and rainwater catchment in new development as appropriate to recycle water. Evaluate the use of recycled water in new and existing buildings and landscapes.

See also: EC3.G; HW10.H.

Action CN3.C

Green Marinas Program

Consider establishing a Green Marinas Program to encourage boat clubs and marinas to adopt environmentally-friendly operating procedures that are consistent with San Francisco Bay Conservation and Development Commission (BCDC) and Department of Boating and Waterways best practices and guidelines.

Action CN3.D

Flood Control Requirements

Require new development to install and maintain flood control measures on all creeks and watersheds in coordination with the Contra Costa County Flood Control and Water Conservation District. Include flood prevention mitigation measures for any developments within the 100-year floodplain. Require new development to install flood control measures to address sea level rise as appropriate. Improve groundwater recharge and minimize stormwater runoff to better accommodate floodwaters.



GOAL CN3

Improved Water Quality

Action CN3.E

Water Conservation

Implement water conservation efforts for households, businesses, industries and public infrastructure. Include measures such as the following:

- Require low-flow appliances and fixtures in all new development in accordance with EBMUD Water Service Regulations (Section 31).
- Work with water providers and water conservation agencies to create an incentives program that encourages retrofitting existing development with low-flow water fixtures;
- Require new development and landscaped public areas to utilize state-of-the-art irrigation systems that reduce water consumption including graywater systems and rainwater catchment;
- Encourage use of drought-tolerant and native vegetation;
- Require new plantings be grouped by hydrozones of water needs listed in the WUCOL III developed by the Department of Water Resources and the University of California Cooperative Extension (or successor document); and
- Require development project approvals to include a finding that all feasible and cost-effective options for conservation and water reuse are incorporated into project design including graywater systems.

See also: EC3.F; HW10.G.



GOAL CN4 Improved Air Quality

Policy CN4.1

Air Quality

Support regional policies and efforts that improve air quality to protect human and environmental health and minimize disproportionate impacts on sensitive population groups. Work with businesses and industry, residents and regulatory agencies to reduce the impact of direct, indirect and cumulative impacts of stationary and non-stationary sources of pollution such as industry, the Port, railroads, diesel trucks and busy roadways. Fully utilize Richmond's police power to regulate industrial and commercial emissions. Ensure that sensitive uses such as schools, childcare centers, parks and playgrounds, housing and community gathering places are protected from adverse impacts of emissions.

Continue to work with stakeholders to reduce impacts associated with air quality on disadvantaged neighborhoods and continue to participate in regional planning efforts with nearby jurisdictions and the Bay Area Air Quality Management District to meet or exceed air quality standards. Support regional, state and federal efforts to enforce existing pollution control laws and strengthen regulations.

See also: EC5.3; HW9.1; ED1.4.



GOAL CN4 Improved Air Quality

Action CN4.A

Bay Area Air Quality Management District Partnership

Continue to work with the Bay Area Air Quality Management District (BAAQMD) to meet or exceed air quality standards set in the BAAQMD's Clean Air Plan and to ensure projects incorporate feasible mitigation measures if not already provided for through proposed project design.

Action CN4.B

Air Pollution Reduction Strategy

Support local and regional efforts to develop strategies that reduce air pollution, reduce auto use, expand transit and non-motorized transportation options and reduce congestion and idling time including programs to reduce air pollution from stationary sources such as power plants, oil refineries and commercial and residential buildings. Work with regional agencies as they monitor air quality impacts and establish best practices for reducing emissions.

See also: HW9.B

Action CN4.C

Climate-Friendly Fuel Using Vehicles

Support the use of highly efficient climate-friendly fuel using vehicles, adequate alternative refueling stations and the use of waste for producing fuel where feasible or rational.

See also: EC2.A; CR5.C

Action CN4.D

Air Quality Monitoring and Reporting Program

Work with the Bay Area Air Quality Management District and other government agencies to establish and identify funding for a citywide air quality monitoring and reporting program. The air quality monitoring and reporting program would assess the cumulative impact of air pollution and toxins on human and environmental health and monitor exposure of sensitive uses such as schools, childcare centers, parks and playgrounds, housing and community gathering places.

Collaborate with the County Health Services Department, the Bay Area Air Quality Management District and state agencies to establish baseline exposures and document health effects associated with monitored baseline exposures and develop provisions to hold businesses and operations financially accountable for their impacts on the environment or community due to air pollution exceeding legal thresholds.

See also: ED1.G; EC5.C; HW9.A



GOAL CN5

Environmental Sustainability

Policy CN5.1

Energy Efficiency and Conservation

Promote efficient use of energy and conservation of available resources in the design, construction, maintenance and operation of public and private facilities, infrastructure and equipment. Collaborate with partner agencies, utilities and businesses to support a range of energy efficiency, conservation and waste reduction measures, including development and retrofitting of green buildings and infrastructure; installation of energy-efficient appliances and equipment in homes and offices; and heightened awareness of energy and conservation issues.

Policy CN5.2

Sustainable Development Standards and Practices

Promote environmentally sustainable development principles for buildings, neighborhoods and infrastructure. Encourage construction and building development practices that reduce resource expenditures throughout the life-cycle of a structure.

Policy CN5.3

Solid Waste Reduction and Recycling

Promote waste reduction and recycling to minimize materials that are processed in landfills. Encourage residents and businesses to reduce waste and minimize consumption of goods that require higher energy use for shipping and packaging. Encourage composting to reduce food and yard waste and provide mulch for gardening. Reducing waste and selecting minimum-impact products will conserve land and energy resources. Develop a comprehensive recycling and composting program for all city-owned facilities.

See also: EC3.3; HW10.6

Policy CN5.4

Leadership in Sustainability

Continue to require all City facilities and services to incorporate energy and resource conservation standards and practices. Take a leadership role in implementing programs for energy and water conservation, waste reduction, recycling and reuse and increased reliance on renewable energy. City buildings and infrastructure facilities should meet green standards. Incorporate drought-tolerant landscaping. City purchasing agreements should favor recycling and energy-efficient products and practices.



GOAL CN5

Environmental Sustainability

Action CN5.A

Renewable Energy

Encourage and support the generation, transmission and use of locally distributed renewable energy. Advocate at the regional and state level for upgrades to the existing power grid so that it can support renewable energy production and transmission.

See also: EC3.B; HW10.D

Action CN5.B

Environmental Education Program

Consider developing an Environmental Education Program. The City could work closely with East Bay Municipal Utility District, the Contra Costa Clean Water Program, Pacific Gas & Electric Company and other agencies to increase public awareness regarding conservation efforts. Identify strategies to increase public awareness of green building practices including a green building pilot project. Establish programs that promote education and awareness of the natural environment and support activities that help Richmond residents become more aware of their natural resources.

Work with the Bay Area Air Quality Management District and local public transit providers to increase public awareness regarding air quality. Promote awareness campaigns that educate the public regarding air quality data and actions they can take to reduce air pollution.

Develop educational programs to increase energy conservation within households and businesses. Create and facilitate a series of educational workshops for residents and business owners on composting and recycling.

Action CN5.C

Green Building Ordinances

Require that newly constructed or renovated City-owned and private buildings and structures comply with the City's adopted Green Building Ordinances. Periodically upgrade requirements as mainline construction practices develop and new materials and building products become available with the intent of meeting or exceeding the State's zero net energy goals by the year 2020.

See also: EC4.H; CF3.A; HW10.B



GOAL CN5

Environmental Sustainability

Action CN5.D

Solid Waste Reduction and Recycling

Work with joint power authority or solid waste facility holder to expand recycling programs and reduce the generation of solid wastes. Potential measures could include: providing recycling containers in parks and public spaces; establishing computer reuse and recycling programs; expanding or enhancing recycling and green waste services for all residents and businesses; and providing locations for household hazardous wastes to be recycled. The City shall also encourage reuse depots and timber harvesting of removed urban trees.

See also: EC3.D; HW10.E

Action CN5.E

Climate Action Plan

Develop a climate action plan for reducing greenhouse gas emissions to meet or exceed state reduction targets. Components of the plan should include: a comprehensive greenhouse gas emissions inventory and forecast; emissions reduction target(s); assessment of the City's vulnerability to climate change; climate change resiliency goals; broader sustainability assessment; sustainability targets; strategies and measures to address climate change mitigation, sustainability and adaptation; financing and implementation approaches; a public education and information program; and a program for monitoring and reporting results.

Richmond's baseline greenhouse gas emissions inventory and forecast will provide a benchmark for planning and monitoring progress in achieving mandated targets. Incorporate public education programs to raise community awareness.

The climate action plan should include mitigation strategies for addressing the sources of greenhouse gas emissions in the community. Adaptation strategies will focus on potential local impacts of climate change such as sea level rise, increased risk of flooding, diminished water supplies and public health. Broader sustainability measures may include the preservation of local water quality, air quality, open space and biodiversity.

The climate action plan should also include information on the financing and implementation of each strategy or measure to ensure timely and well-informed action. The plan will be subject to the monitoring and reporting program to ensure the City achieves its greenhouse gas reduction, protection and adaptation targets.

Update the plan periodically in accordance with evolving state and federal policy and regulatory frameworks, as well as advancements in scientific research and data on climate change.

See also: EC1.A; HW10.A



GOAL CN5

Environmental Sustainability

Action CN5.F

Construction and Demolition Ordinance

Develop an ordinance covering all construction and demolition activities that meets and exceeds minimal state building code diversion for beneficial reuse standards. Encourage preservation and readaptation of existing structures over replacement and deconstruction and reuse of building materials over demolition.

See also: EC3.E; HW10.F



GOAL CN6

A Healthy Urban Environment

Policy CN6.1

Toxic and Contaminated Sites

Continue to work with the appropriate local, state, and federal agencies to promote the clean-up and reuse of contaminated sites to protect human and environmental health. Work with property owners and regional agencies to prevent, reduce or eliminate soil and water contamination from industrial operations, the Port and other activities that use, produce or dispose of hazardous or toxic substances. Implement appropriate mitigation measures and clean-up of sites that are known to contain toxic materials as a condition of reuse. Support the remediation and reuse of large, disturbed sites, such as the Winehaven complex at Point Molate and the Terminal 4 site at Point San Pablo, into mixed-use centers that provide the maximum benefit to the community without compromising the integrity of the surrounding natural areas.

See also: LU4.4; ED1.3; HW9.2.

Policy CN6.2

Protection and Expansion of Tree Resources

Protect and expand tree resources within Richmond. Protect native trees, heritage trees and oak woodlands; expand and maintain street tree planning; use zoning and building requirements to ensure that trees are included in new developments; and engage the community to undertake planting campaigns. Furthermore, promote trees as economic and environmental resources for the use, education and enjoyment of current and future generations.

See also: HW9.4



GOAL CN6

A Healthy Urban Environment

Action CN6.A

Site Remediation

Require property owners to comply with and pay for state and federal requirements for site remediation as a condition for approving redevelopment on contaminated sites. In collaboration with other government agencies, utilize the Department of Toxic Substance Control (DTSC) Cortese List to prioritize the remediation of city and non-city-owned property to protect human and environmental health. Seek state and federal funds to implement the necessary level of clean-up.

See also: ED1.F; LU4.D; HW9.J

Action CN6.B

Hazardous Substance Management

Implement standards dealing with the safe management of hazardous substances in close coordination with the City Fire Department and the Department of Toxic Substance Control. The standards should require soil testing at development sites where contamination is suspected, address safe household hazardous and universal waste disposal and ensure compliance with hazardous substance regulations and safe transport of hazardous materials. Use of the latest technologies available should be considered when conducting remediation in order to expedite the cleansing process and do the least harm to the environment.

See also: HW9.K

Action CN6.C

Pollution Prevention Program

Continue to implement the City's pollution prevention program for residents, businesses and industry to provide information on pollution prevention, disposal of hazardous waste and chemicals, liability and clean-up. The program could educate the community on laws governing the proper handling of hazardous materials, especially those laws which pertain to discharging materials into creeks and storm drains.

Action CN6.D

Public and Private Tree Preservation Ordinance

Continue to implement the Public and Private Tree Preservation Ordinance that identifies and protects native trees and trees with historical importance.



GOAL CN6

A Healthy Urban Environment

Action CN6.E

Urban Forestry

Implement landscaping practices in urban areas of the City to reduce heat island effect and contribute to carbon mitigation. Provide landscaping consistent with the “City of Richmond Urban Forest Management/Master Plan Reforestation Supplement (1997)” and any other adopted tree or vegetation ordinances or plans.

See also: PR4.B; EC6.E; HW9.M

Action CN6.F

Coordination with Utility Providers

Coordinate with utility providers to re-route utility lines that are in close proximity to native and other landmark trees. Work with utility providers to coordinate transmission line location and other potential impacts associated with undergrounding utilities.

Action CN6.G

Tree City USA Status

Maintain “Tree City USA” status by continuing to implement the revised Public and Private Tree Preservation Ordinance and utilizing the Urban Forest Committee to advise on tree issues.



Summary of Implementing Actions

The table presented on the following pages is a tool for guiding implementation of the City’s Conservation, Natural Resources and Open Space Element. Organized by the community’s broad goals, the table provides an overview of policies and implementing actions detailed in the previous section. Each action is linked to a designated lead responsible party. Related policies are identified in the final column.

Goal CN1: Preserved and Restored Natural Habitat and Biodiversity

Action		Lead Responsibility	Supporting Policies
CN1.A	Habitat Conservation	Planning and Building Services	CN1.1
CN1.B	Priority Conservation Areas	Planning and Building Services	CN1.1
CN1.C	Creek Access Easement	Planning and Building Services	CN1.1, CN1.3
CN1.D	Creek Corridor Performance Standards	Public Works	CN1.1, CN1.3
CN1.E	Habitat Restoration	Public Works	CN1.1
CN1.F	Special Status Species Protection Methods	Public Works	CN1.1
CN1.G	Landscape Design Guidelines	Planning and Building Services	CN1.2
CN1.H	Urban Creek Restoration	Engineering	CN1.3

Goal CN2: Conserved Open Space

Action		Lead Responsibility	Supporting Policies
CN2.A	Transfer of Development Rights Program	Planning and Building Services	CN2.1, CN2.4
CN2.B	Open Space Easements	Planning and Building Services	CN2.1
CN2.C	Parkland Dedication Ordinance	Planning and Building Services	CN2.1, CN2.7
CN2.D	Open Space Plan	Planning and Building Services	CN2.1, CN2.2, CN2.4
CN2.E	Hillside Physical Constraint Area Ordinance	Planning and Building Services	CN2.3
CN2.F	Community Access and Mobility	Planning and Building Services	CN2.5
CN2.G	Sustainable Urban Agriculture Assessment	Planning and Building Services	CN2.4
CN2.H	Specific Actions for the Point Isabel Area	Planning and Building Services	CN2.1, CN2.2, CN2.5, CN2.7



Goal CN3: Improved Water Quality

Action		Lead Responsibility	Supporting Policies
CN3.A	NPDES Compliance and Permit	Engineering	CN3.1
CN3.B	Water Recycling	Engineering	CN3.4
CN3.C	Green Marinas Program	Planning and Building Services	CN3.2
CN3.D	Flood Control Requirements	Public Works	CN3.3
CN3.E	Water Conservation	Engineering	CN3.4

Goal CN4: Improved Air Quality

Action		Lead Responsibility	Supporting Policies
CN4.A	Bay Area Air Quality Management District Partnership	Planning and Building Services	CN4.1
CN4.B	Air Pollution Reduction Strategy	City Manager's Office	CN4.1
CN4.C	Climate-Friendly Fuel Using Vehicles	City Manager's Office	CN4.1
CN4.D	Air Quality Monitoring and Reporting Program	City Manager's Office	CN4.1

Goal CN5: Environmental Sustainability

Action		Lead Responsibility	Supporting Policies
CN5.A	Renewable Energy	City Manager's Office	CN5.1
CN5.B	Environmental Education Program	City Manager's Office	CN5.1, CN5.2, CN5.3
CN5.C	Green Building Ordinance	Planning and Building Services	CN5.2
CN5.D	Solid Waste Reduction and Recycling	Engineering	CN5.3
CN5.E	Climate Action Plan	City Manager's Office	CN5.3, CN5.4
CN5.F	Construction and Demolition Ordinance	Planning and Building Services	CN5.3



Goal CN5: Environmental Sustainability

Action		Lead Responsibility	Supporting Policies
CN6.A	Site Remediation	City of Richmond as Successor Agency	CN6.1
CN6.B	Hazardous Substance Management	Fire	CN6.1
CN6.C	Pollution Prevention Program	City Manager's Office	CN6.1
CN6.D	Public and Private Tree Preservation Ordinance	Planning and Building Services	CN6.2
CN6.E	Urban Forestry	Public Works	CN6.2
CN6.F	Coordination with Utility Providers	Public Works	CN6.2
CN6.G	Tree City USA Status	Planning and Building Services	CN6.2



Regulatory Framework

Organizations

Two principal City departments contribute significantly to conservation, natural resources and open space efforts: Planning and Building Services and Public Works. Their participation ensures compliance with local, state and federal laws, regulations and ordinances. Additional regulatory agencies include:

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service is a unit of the United States Department of the Interior that is dedicated to managing and preserving wildlife. Departments include the National Wildlife Refuge System, Bird Habitat Conservation, the National Fish Hatchery System and the Endangered Species Program (www.fws.gov).

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers is a federal agency and a major Army command whose mission is to provide military and public works services, by providing engineering services and capabilities as a public service across the United States. Their most visible missions include planning, designing, building and operating locks and dams. Other civil engineering projects include flood control and dredging for waterway navigation, construction of flood protection systems, design and construction of military facilities and environmental regulation and ecosystem restoration (www.usace.army.mil).

California Department of Fish and Game

The California Department of Fish and Game (DFG) manages and protects the state's diverse fish, wildlife, plant resources and native habitats. The Department is also responsible for the diversified use of fish and wildlife including recreational, commercial, scientific and educational uses. The Department utilizes its law enforcement division to prevent and stop illegal poaching (www.dfg.ca.gov).

San Francisco Bay Conservation and Development Commission

The San Francisco Bay Conservation and Development Commission (BCDC) is a California State commission dedicated to the protection and enhancement of San Francisco Bay and to the encouragement of the Bay's responsible use. The BCDC requires permits for filling of the Bay, dredging the bottom of the Bay and shoreline projects (www.bcdc.ca.gov).

San Francisco Regional Water Quality Control Board

The San Francisco Regional Water Quality Control Board provides groundwater protection, wastewater discharge regulation, site cleanups, brownfields cleanups, stormwater basin planning, water quality information, enforcement, stream and waterway protection. The Board has numerous responsibilities including issuing the NPDES wastewater permit, defining waste discharge requirements, issuing land-fill permits, regulating agricultural activities and wastewater recycling and issuing permits for filling

surface waters and dredging operations (www.swrcb.ca.gov/sanfranciscobay).

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) seeks to improve air quality by regulating sources of air pollution in the nine counties of the San Francisco Bay Area. BAAQMD adopts and enforces air pollution regulations for the district (www.baaqmd.gov/).

East Bay Regional Park District

The East Bay Regional Park District (EBPRD) is a special district operating in Alameda and Contra Costa Counties. It maintains and operates a system of 65 regional parks with a total of almost 96,000 acres including wilderness areas, developed parks with opportunities for swimming, hiking, angling, boating and camping (www.ebparks.org).

Codes, Ordinance, Regulations And Acts

The City of Richmond relies on several federal, state and local regulatory tools to enforce management of natural resources. These tools range from legislative acts to ordinances and plans.

Federal

National Environmental Policy Act

The National Environmental Policy Act (NEPA) is a federal environmental review process for projects that have a federal nexus (for example, the project impacts federal resources or lands, receives federal funding or requires federal approval or permits). NEPA requires federal agencies to integrate environ-



mental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions (www.epa.gov/compliance/nepa/).

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) is a federal law that protects species that are endangered or threatened with extinction. FESA prohibits harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing or collecting endangered or threatened wildlife species (16 USC 1532, 50 CFR 17.3) (www.nmfs.noaa.gov/pr/pdfs/laws/esa.pdf).

Clean Water Act

The Clean Water Act, passed in 1972, regulates and protects surface water quality across the United States. Sections 401 and 404 relate directly to local agency planning. Section 401 of the Clean Water Act requires a State Water Quality Certification for all federal permit or license applications for any activity that may result in a discharge to a water body to ensure compliance with state water quality standards. Most Certifications are issued in connection with section 404 permits for dredge and fill discharges. This Element contains a goal with supporting policies and actions related to creeks and a goal with supporting policies and actions related to water quality (www.epa.gov/OWOW/wetlands/regs/sec401.html).

Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into waters of the United States (waters of the U.S.), including

wetlands and vernal pools. Activities in waters of the U.S. that are regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects (www.epa.gov/owow/wetlands/pdf/reg_authority_pr.pdf).

NPDES Permit

The Clean Water Act requires National Pollution Discharge Elimination System (NPDES) permits for stormwater discharges from municipal storm drain systems. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the San Francisco Bay Regional Water Quality Control Board's (Water Board) planning document. The Water Board issues the municipal stormwater NPDES permits to address these impairments and recommended actions. Currently the City of Richmond and 15 other cities and towns, Contra Costa County, and the Contra Costa County Clean Water Program are co-permittees under a single stormwater NPDES Permit (No. CAS0029912 or successor permit). The next Municipal Regional Permit will be a permit covering cities, towns and county agencies in 5 Bay Area counties (www.epa.gov/npdes/).

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is the State's environmental review process that requires public agencies to identify the significant environmental effects of a project and either avoid the significant environmental effects or mitigate

the significant environmental effects where feasible (www.ceres.ca.gov/ceqa/).

California Endangered Species Act

The California Endangered Species Act is the State's listing of endangered and threatened species. It requires state agencies to consult with the California Department of Fish and Game (CDFG) when preparing CEQA documents to ensure that the state lead agency actions do not jeopardize the existence of listed species (www.ceres.ca.gov/wetlands/permitting/cesa_summary.html).

California Fish and Game Code

The California Fish and Game Code contains laws and regulations relating to California's fish, wildlife, plants and their habitats. The Code is administered by the California Department of Fish and Game (www.law.justia.com/california/codes/fgc.html).

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) addresses the need for a continuing supply of mineral resources and to prevent or minimize the negative impacts of surface mining to public health, property and the environment. SMARA's requirements apply to all surface mining operations in California that disturb more than one acre or remove more than 1,000 cubic yards of material including, but not limited to, prospecting and exploratory activities, dredging and quarrying, streambed skimming, borrow pitting and the stockpiling of mined materials (www.conservation.ca.gov/omr/smara/Pages/Index.aspx).



Local

East Bay Regional Park District (EBRPD) Master Plan

The EBRPD Master Plan of 2007 sets policies and guidelines for resource conservation, management, interpretation, public access and recreation for regional parks within the East Bay including those located in Richmond (www.ebparks.org/planning/mp).

San Pablo Peninsula Open Space Study

This study provides an assessment of park and open space lands on the San Pablo Peninsula and includes recommendations related to land use, trails and recreational facilities.

Hillside Physical Constraint Area Ordinance

This ordinance regulates development on hillside areas to preserve hills, ridges and their natural features. It seeks to maintain a harmonious visual and functional relationship between the existing natural environment and future development (Zoning Ordinance Section 15.04.510 D) (www.ci.richmond.ca.us)

Landscape Design and Development Guidelines

The Department of Public Works implements the Landscape Design and Development Guidelines in order to assist new developments within the City of Richmond in the design and management of landscaping which is appropriate to local environmental conditions and effective in the conservation of water, both in times of normal weather patterns and during water shortage emergency conditions. The Guidelines are applicable to all new residential

developments of 4 or more dwelling units and/or with a minimum of 10,000 square feet of landscaping and all new or rehabilitated commercial, industrial and institutional developments. The City reviews development plans submitted with a complete application and meeting the submittal requirements of the City via the Site Development Review process administered by the Planning Department. See City of Richmond Department of Public Works.

Urban Forest Management Plan

This plan provides design guidelines for street trees including tree selection lists for Richmond and nursery standards relating to trees being true to type, health of the trees, compliance with federal and state laws, root-ball moisture, tree crown, roots, site preparation, planting water reservoir, mulching and watering.

Tiscornia Estates Specific Plan

The Tiscornia Estate Specific Plan, adopted in 1986, guides development of a 12.2-acre site in the Point Richmond area. The Plan provides a program for land use, circulation, and open space as well as a set of design and development standards for the area.



Notes

1. Official California Legislative Information Website. <http://www.leginfo.ca.gov/>.
2. City of Richmond Municipal Code Section 15.04.510.030D. <http://bpc.iserver.net/codes/richmond/index.htm>.
3. United States Environmental Protection Agency. "Aquatic Biodiversity." 2007. <http://www.epa.gov/bioindicators/aquatic/index.html>.
4. United States Environmental Protection Agency. "2006 CWA Section 303(d) List of Water Quality Limited Segments Being Addressed by USEPA Approved TMDLs". 2007. http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/state_06_wtmdl.pdf. (See also EIR Hydrology Settings Section and References).
5. California Natural Diversity Database (CNDDDB). "USFWS Federal Endangered and Threatened Species List." http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp.
6. United States Department of Agriculture Natural Resource Conservation Service Web Soil Service. 2007. <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.
7. City of Richmond. "Environmental Impact Report: 1992 General Plan Update Richmond." 1992.
8. Governor's Office of Planning and Research. State of California General Plan Guidelines. 2003.

Cover Artwork

1. Left: Photograph by Richard Mitchell
2. Right: "Girl and Shorebird" by Yolanda Holley, Richmond Resident