CHAPTER

7

CONSERVATION AND SUSTAINABILITY ELEMENT

A. INTRODUCTION

The Conservation and Sustainability Element addresses the management of Albany's natural resources, including soil, minerals, water, air, vegetation, and wildlife. It identifies environmentally sensitive areas in the city and includes policies for their long-term protection.

The Element goes beyond the topics mandated by the State of California and also covers the City's response to global climate change. This includes measures specifically designed to reduce greenhouse gases as well as other measures to minimize waste, conserve energy and water, and reduce consumption of non-renewable resources such as fossil fuels. The former measures are covered by the City's Climate Action Plan, discussed below. The latter initiatives were initially developed to improve environmental quality and support more sustainable living, but today provide the collateral benefit of curbing greenhouse gas emissions.

Albany includes diverse ecosystems, from a eucalyptus forest on Albany Hill, to riparian areas along the city's creeks, to a State Marine Reserve comprised of wetlands, mudflats and Bay waters. Over 67 percent of the area within the Albany city limits is comprised of the open waters of San Francisco Bay. These areas provide habitat for fish and marine life, and help maintain the ecological balance of the Bay. Even the city's most urbanized neighborhoods sustain wildlife, with species ranging from wild turkeys to Monarch butterflies. The city's soils support backyard gardens, experimental agriculture, and an "urban forest" comprised of trees along streets and in parks and yards. The city's creeks drain thousands of acres in the East Bay, extending well beyond Albany itself.

The phenomenon of climate change makes the Conservation and Sustainability Element especially important in guiding public policy over the next 20 years. Albany adopted a Climate Action Plan (CAP) in 2010. Much of the emphasis of that Plan is on reshaping the City's land use and transportation systems to reduce dependence on carbon-emitting fossil fuels. The General Plan advances CAP strategies by focusing Albany's future development along transit corridors and improving the pedestrian, bicycle, and public transit systems. Many of the other CAP strategies, including those relating to buildings and energy, waste reduction, green infrastructure, water conservation, and food and agriculture, have been incorporated into this Element to ensure an internally consistent and comprehensive climate action policy.

B. NATURAL FEATURES

Albany is located on a gentle westward-sloping alluvial plain on the eastern shore of San Francisco Bay. The city's principal natural features are San Francisco Bay, Albany Hill, Fleming Point, and several creeks which meander from the hills west to the Bay. All of these features have been dramatically altered by human settlement over the last 150 years.

Protection of natural features is a basic principle of this General Plan. The Albany shoreline, which was reshaped by landfill during the 20th Century, is protected by state and federal regulations and by public ownership in most places. The General Plan supports shoreline restoration, waterfront recreational improvements, and strategies to improve resilience and adaptation as sea level rises.

Much of Albany Hill, which was modified by dynamite blasting and eucalyptus planting a century ago, has been acquired as parkland or placed under conservation easements. The remaining private properties on Albany Hill are subject to policies that discourage grading and encourage open space protection.

One of many eco-themed entries in the annual Solano Stroll parade.

Most sections of Albany's creeks were modified, buried, or rerouted as neighborhoods and business districts grew up around them. Where these creeks traverse public property, steps are being taken to restore and enhance them today. On private property, streambed alterations are regulated by state and federal laws, and by Albany's creek protection ordinance.

City policies will continue to protect Albany's natural features and ecosystems, while restoring important resources that have been compromised by urbanization.

C. EARTH RESOURCES

Soils

Albany is underlain by Franciscan bedrock, with sandstone rock outcroppings at Albany Hill and at Fleming Point near the shoreline. Alluvial sediments consisting of unconsolidated sand, gravel, silt, and clay have been deposited on top of the bedrock by stream flows from the Berkeley Hills.

Along the Albany waterfront, much of the native soil has been covered by artificial fill or was removed during the construction of Golden Gate Fields. In the 1930s and 40s, fill was deposited on the area that became the racetrack and its parking lots. From the 1950s through the early 1980s, fill composed of construction debris and concrete rubble was placed to the north and northwest of the racetrack parking area. These areas are known as the Albany Plateau, Neck, and Bulb. Interstates 80 and 580 were likewise constructed on engineered fill, underlain by alluvium or Bay mud.

Soil surveys from the U.S. Department of Agriculture (2013) indicate that there are four basic soil mapping units in Albany. Near the Bay, soils are classified as Urban Land Tierra, with moderate to high shrink-swell and moderate corrosivity. East of this area is a band of Urban Land Clearlake soil. These soils are typically very deep and poorly drained.

A third mapping unit, Millsholm silt loam, exists on Albany Hill and in the northwestern part of the City. These soils are very deep and well drained, with high shrink-swell potential. The northeastern part of the city is characterized by Tierra Loam soils. These soils are potentially productive but may be moderately corrosive. They also have high shrink swell potential. Local building codes and engineering standards account for soil characteristics, protecting foundations and utilities from these conditions.

Minerals

The California Division of Mines and Geology classifies the majority of Albany as "MRZ-1" in its mineral land classification system. This corresponds to areas where no significant mineral deposits are present, or where it judged that little likelihood exists for their presence. Albany Hill is classified as "MRZ-2." This indicates that significant deposits are present, or there is a high likelihood for their presence. Historic mining of sandstone occurred at Albany Hill and Fleming Point. Such operations are no longer feasible given the urbanized context of both sites. There have been no natural gas, oil, or geothermal resources identified within the city.

Cerrito Creek

Albany State Marine Reserve

D. WATER RESOURCES

Creeks and Watersheds

Albany lies within the watersheds of Codornices and Cerrito Creeks. Both creeks originate on the western slopes of the Berkeley Hills and are spring-fed. Codornices Creek defines the city's southern border and Cerrito Creek defines its northern border. The Codornices Creek watershed is about 1.1 square miles, while the Cerrito Creek watershed is just over 2.0 square miles.

Both watersheds are heavily urbanized, with much of the surface area covered by roads, parking lots, and buildings. Like most urban streams in the East Bay, Cerrito Creek has been diverted into underground pipes and modified concrete or earthen channels as it passes through Albany. Codornices Creek has not been as markedly altered and is open through most of the city. Portions have been diverted into culverts, primarily under local streets, but much of the stream is open and marked by thick vegetation. It is one of the few East Bay creeks that supports a native steelhead population.

As shown in Figure 7-1, several tributaries to these two creeks pass through Albany. Marin Creek flows completely underground, roughly following Marin Avenue. Just to the south, Village Creek flows through underground culverts in eastern Albany, surfaces on the University Village property west of San Pablo Avenue, and then flows into a culvert beneath the Union Pacific railroad tracks and Interstate 80. It joins Codornices Creek on the edge of Golden Gate Fields, before it flows into the Bay. In the Cerrito Creek watershed, Middle Creek flows underground through northern Albany until meeting Cerrito Creek near Creekside Park.

The City has been implementing creek restoration programs since the 1970s. These efforts continue today, in partnership with creek advocacy groups such as Friends of Five Creeks. There are approximately 3.62 miles of daylighted (open) creek channels in the city today.

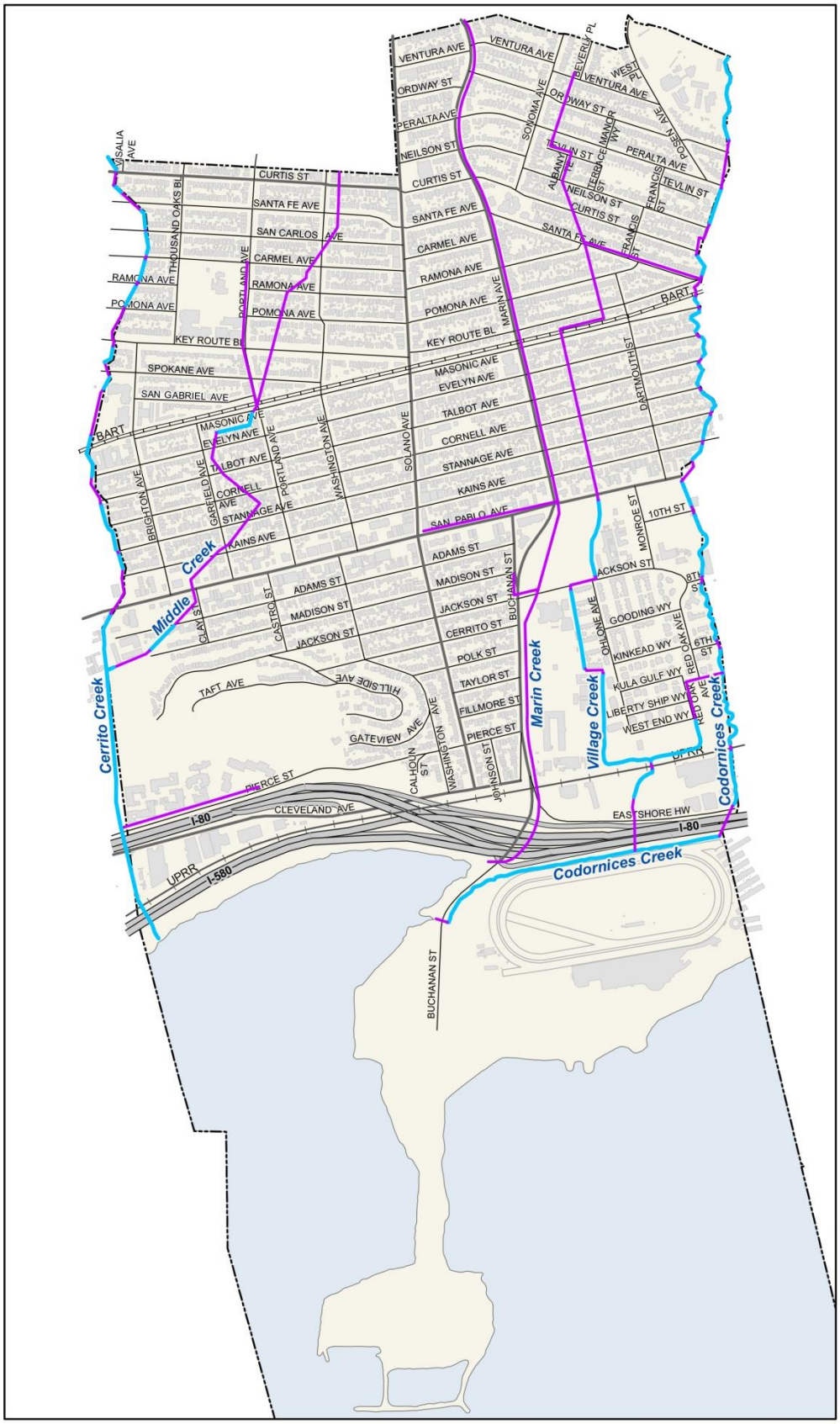

FIGURE 7-1
Creeks

SOURCE: City of Albany (2014).
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Creek preservation and restoration must be considered when reviewing proposed development adjacent to the creeks. The Zoning Ordinance incldues a Watercourse Overlay District covering areas within 75 feet of the cernterlines of Codornices and Cerrito Creeks, as well as Special Flood Hazard areas. The purpose of the Overlay District is to regulate land uses to prevent property damage due to floodwaters and the transportation of wreckage and debris. Requirements include a prohibition on structures within 20 feet from the top of bank, with some exceptions that may be granted with a Use Permit by the Planning and Zoning Commission.

Groundwater

Albany's groundwater is part of a basin that extends from Suisun Bay on the north to Hayward on the south and the Berkeley Hills on the east. The basin has a surface area of 121 square miles, and has the capacity to store an estimated 2.5 million acre-feet of water. Salt water intrusion affects much of the groundwater in areas near San Francisco Bay, affecting its suitability for domestic use.

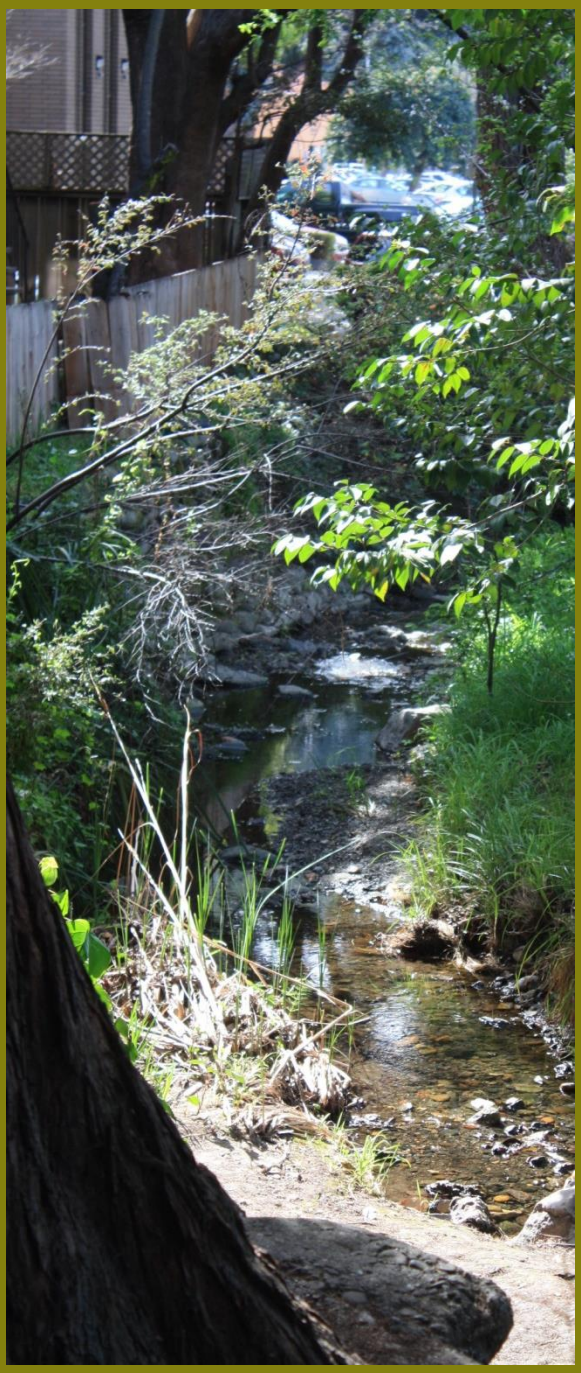
Water Quality

The last five decades have seen significant improvements to water quality in San Francisco Bay and its tributaries. This is largely due to state and federal regulations aimed at reducing water pollution. In the 1970s and 80s, regulations focused on "point" sources of pollution, such as wastewater treatment plants and heavy industry. During the 1990s and 2000s, the focus shifted to "non-point" sources—primarily runoff from streets, lawns, parking lots, and undeveloped land.

There are no identified "point" sources of water pollution in Albany. However, both Codornices and Cerrito Creek experience "non-point" source pollution. Loss of riparian vegetation, illegal dumping, and polluted runoff have resulted in high water temperatures, trash, and sedimentation. Runoff from City streets and lawns may pick up pesticides, fertilizer, oil and grease, trash, animal waste, household chemicals, and other pollutants, contaminating surface waters. In 1998, Albany prepared a Watershed Management Plan to address these issues, remove obstructions to water flow, and improve access to its creeks.

Discharges into the City storm drainage system, which includes Albany's creeks, are regulated by a Municipal Regional Permit (MRP) issued under the National Pollutant Discharge Elimination System (NPDES) program. The MRP is overseen by the San Francisco Bay Regional Water Quality Control Board and is administered by more than 70 cities across the entire Bay Area. The permit includes special requirements for new development projects that add or replace more than 10,000 square feet or more of impervious surface area. These include site design, source control, and stormwater treatment measures. The permit also requires no net increase in runoff flow and volume when development takes place. The MRP is subject to change and new requirements may be applied in the future.

Like other cities in the Bay Area, Albany is required to implement a Clean Water Program as part of the MRP. The Program includes education, maintenance, enforcement, and the implementation of Best Management Practices (or "BMPs") for different types of businesses. Street sweeping, storm drain catch basin clean-outs, illicit discharge detection and elimination, and water testing and countywide monitoring are also part of this Program. Major developments are required to follow construction practices which reduce soil loss and runoff, and must include post-construction measures to avoid future problems.



Eliminating Trash in Albany's Waterways

Plastic bags, bottles, food and beverage containers, food waste, packaging, and other trash are one of the most persistent threats to water quality in the Bay Area. In 2009, new stormwater management regulations went into effect requiring all cities in the region to reduce litter in their drainage systems by 40 percent by 2014, 70 percent by 2017, and a point of "no adverse impact" by 2022. Albany is working to meet these trash reduction targets. New targets may be adopted in the future as regional stormwater permit requirements are modified.

The City has adopted an ordinance to ban polystyrene foam food service ware from all food vendors and worked with Alameda County to adopt a ban on single use plastic bags for grocery stores and certain other businesses. It is currently working to expand this ban to all retail stores. Albany also conducts regular street sweeping to remove debris from gutters. The City also is implementing a number of educational programs to increase awareness of litter issues and water quality.

One of the most effective ways to reduce litter in waterways is by installing full trash capture devices in storm drain inlets. These devices prevent litter from entering storm drain pipes and creeks, and also reduce flooding from clogged drains. In 2013, Albany installed 17 full trash capture devices along Solano Avenue, Cleveland Avenue, and Eastshore Highway. The City adopted a Trash Long-Term Reduction Plan in 2014, including the installation of additional trash capture devices—now underway.

E. AIR RESOURCES

Climate and Wind Patterns

Air quality is a function of both air pollution and local climate. In Albany, winds are generally from the west off the Pacific Ocean and San Francisco Bay, creating relatively good air quality conditions. Winds are typically lightest in the fall and winter, which is when air quality problems are most common. Winds from the south and east may also compromise air quality, as pollutants from motor vehicles, wildfires, industry, dust, and other sources affect the area.

The city is located in the San Francisco Air Basin, almost directly opposite the Golden Gate. Marine air travels through the Golden Gate, while the Berkeley Hills provide a barrier to air flow from the east. This tends to moderate air temperatures and keep the city cooler than inland areas in the summer and warmer during winter evenings.

During warm weather, the daytime flow of marine air is sometimes capped by a dome of warm air that acts as a lid over the region. The resulting photochemical processes may create unhealthful levels of smog. A different type of inversion occurs in the winter as cool air pools in low elevations while the air aloft remains warm.

Air Quality

Since the approval of the federal Clean Air Act in 1970, air quality has been subject to standards and regulations aimed at protecting public health and reducing the economic and environmental costs of air pollution. The Clean Air Act established maximum safe concentrations for common pollutants such as carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). The text box on the next page provides an overview of these pollutants.

In addition to the federal Clean Air Act, air quality is also subject to the California Clean Air Act and the oversight of the California Air Resources Board. State standards have been adopted for most of the pollutants covered by federal law. Generally, these standards are more stringent than the national standards. The Air Resources Board also has adopted guidelines for the siting of sensitive uses such as housing, medical facilities, and playgrounds in areas likely to have high concentrations of air pollutants, including areas within 500 feet of freeways.

Most of the responsibility for regulating emissions has been delegated to regional air districts. The Bay Area Air Quality Management District (BAAQMD) regulates both stationary sources such as smokestacks and indirect sources such as traffic from new development. BAAQMD also is responsible for air quality monitoring and enforcement. The agency also develops and implements plans to attain state and federal standards when such standards are exceeded. Such plans are focused on reducing emissions from transportation, which is the biggest source of air pollution in the Bay Area.

The BAAQMD is currently implementing the 2010 Clean Air Plan. The Plan provides strategies to reduce ozone, particulates, and air toxics, including numerous emission control measures. Many of these measures are already underway.

Air quality conditions in the Bay Area have improved since the 1960s. Concentrations of pollutants and the number of days on which standards are exceeded have fallen dramatically. Exceedances of air quality standards primarily occur on hot sunny summer or fall afternoons, and on cold, windless winter nights.

Major Air Pollutants of Concern

Ozone is formed by photochemical reactions between oxides of nitrogen and reactive organic gases. It is a pungent, colorless gas that typically peaks in the summer and early fall months. Elevated ozone concentrations result in reduced lung function, with particularly acute risks for the elderly, children, and those with respiratory conditions.

Carbon monoxide (CO) is formed by the incomplete combustion of fossil fuels, with motor vehicles accounting for nearly all emissions. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to the central nervous system. It can be fatal at high levels of exposure.

Nitrogen dioxide is a reddish-brown gas formed from fuel combustion under high temperature or pressure. It is a component of smog and contributes to pollution problems such as poor visibility, decreased lung function, and acid rain.

Sulfur dioxide is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. It irritates the respiratory tract, and can injure lung tissue when combined with fine particulate matter.

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Particles up to 10 microns in diameter are referred to as PM_{10}, while fine particles less than 2.5 microns in diameter are called $PM_{2.5}$. Particulates can be directly emitted through fuel combustion, or they may be formed by blowing soil, smoke, chemical reactions, deteriorating tires, and other sources. Particulates can transport carcinogens and other toxic compounds, reduce lung function and aggravate respiratory and cardio-vascular diseases.

Toxic Air Contaminants (TACs) refer to a group of pollutants that are harmful in small quantities, such as benzene, formaldehyde, and hydrogen sulfide. Because diesel fuel engines are a potential source, new development near freeways may require filtration systems to reduce potential exposure.

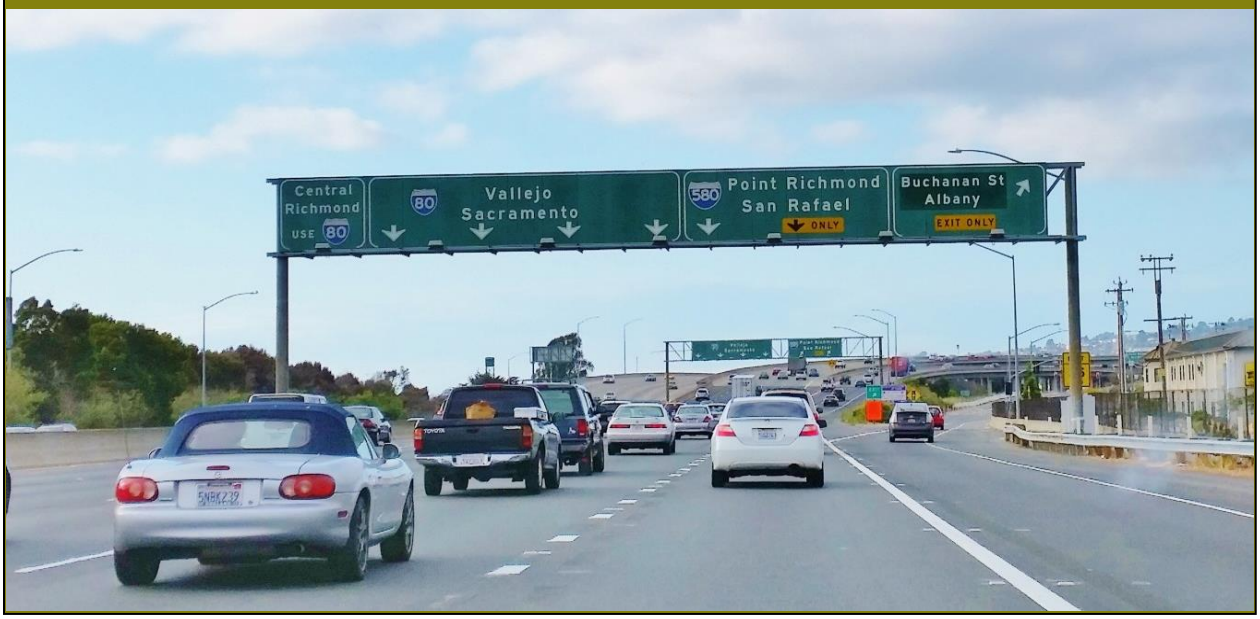


Table 7-1 indicates the attainment status of the San Francisco Bay Area for state and federal criteria pollutants. The table indicates that the region has a "non-attainment" status for the state and federal 8-hour Ozone standards, the California one-hour Ozone standard, the California PM_{10} and $PM_{2.5.}$ standards, and the federal $PM_{2.5}$ standard. The region is awaiting formal re-designation of its attainment status for the federal $PM_{2.5}$ standard since it was deemed to be in attainment by the EPA in 2013.

The BAAQMD maintains air quality monitoring stations at locations throughout the Bay Area. The stations closest to Albany are located in West Oakland, Richmond, and San Pablo. A new monitoring site is scheduled to begin operation in Berkeley in late 2015. Data from these monitoring locations indicate that air quality in the area has generally been good. Between 2011 and 2013, only one violation of the *state* PM_{10} standard occurred (in West Oakland) and no violations of the *federal* PM_{10} standard were recorded.

Vehicle emissions are the greatest air quality concern in Albany today. These emissions can result in carbon monoxide (CO) "hot spots" along freeways and major arterials, especially when vehicles are idling in congestion. Under extreme conditions, CO concentrations can reach unhealthful levels.

Vehicle emissions are also the prime source of ozone in the Bay Area. While cleaner fuels and more fuel-efficient vehicles have reduced ozone levels, further improvements are needed. The solution advocated in this General Plan, and in cities across the Bay Area, is to encourage land use and transportation patterns which are less dependent on automobiles. This includes improvements to public transportation, safer bicycle and pedestrian facilities, a better balance between jobs and housing in each community, and future development that is concentrated near mass transit. Promoting cleaner-burning fuels and more fuel-efficient vehicles is also part of this strategy.

Construction and demolition activities can also affect air quality. Dust often results from demolition, grading, and exposure of soils to the air. The BAAQMD has identified various measures to control dust, such as covering stockpiled soil. Measures to reduce construction equipment exhaust also have been developed. These are typically attached as conditions of approval for major development and construction projects.

Odor is another air quality issue, and may become a bigger issue in the future as development combining ground floor commercial uses and upper story residential uses becomes more common. Air quality standards and technologies have been developed to avoid potential conflicts resulting from restaurants, manufacturing plants, and other uses that produce odors in proximity to housing and other sensitive uses.

Greenhouse Gases

Until the early 2000s, state and federal air regulations focused on the direct health effects of air pollution such as asthma and heart disease. Today, the shift has broadened to include another emerging air quality issue—the link between greenhouse gasses (GHG) and global climate change.

The rate of atmospheric warming has been increasing exponentially over the last 100 years and there is a prevailing scientific opinion that most of this warming is attributable to an increase in greenhouse gases. While some greenhouse gases occur naturally, their release is being accelerated by human activities, such as the burning of fossil fuels, land clearing, and agriculture. Strategies to reduce GHGs focus on the control of carbon dioxide, methane, nitrous oxide, fluorocarbons, and other gases that have been linked to climate change.

Table 7-1: Air Quality Attainment Status in the San Francisco Bay Area

	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration[1]	Attainment Status
Ozone (O_3)	8-Hour	0.070 ppm (137µg/m³)	**Nonattainment**	0.075 ppm	**Nonattainment[2]**
	1-Hour	0.09 ppm (180 µg/m³)	**Nonattainment**		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	Attainment	9 ppm (10 mg/m³)	Attainment
	1-Hour	20 ppm (23 mg/m³)	Attainment	35 ppm (40 mg/m³)	Attainment
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm (339 µg/m³)	Attainment	0.100 ppm	Unclassified
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Attainment
Sulfur Dioxide (SO_2)	24-Hour	0.04 ppm (105 µg/m³)	Attainment	0.14 ppm (365 µg/m³)	Attainment
	1-Hour	0.25 ppm (655 µg/m³)	Attainment	0.075 ppm (196 µg/m³)	Attainment
	Annual Arithmetic Mean			0.030 ppm (80 µg/m³)	Attainment
Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m³	**Nonattainment**		
	24-Hour	50 µg/m³	**Nonattainment**	150 µg/m³	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m³	**Nonattainment**	15 µg/m³	Attainment
	24-Hour			35 µg/m³	**Nonattainment[3]**

Source: Bay Area Air Quality Management District, 2014

Notes:

1 National standards are set by the US EPA at levels determined to protect public health with an adequate margin of safety. Some of these standards may not be exceeded more than once a year and others are defined such that a limited number of exceedances may occur over a multi-year period.

2 The Bay Area was designated a marginal non-attainment area in June 2004. The threshold was subsequently lowered from 0.80 to 0.75 ppm in 2008.

3 In 2013, the EPA determined that the Bay Area met the 24-hour $PM_{2.5}$ standard. However, the Bay Area will remain in non-attainment status until the Air District submits a re-designation request and a maintenance plan.

Units: µg/m³ = micrograms/ cubic meter and mg/m³ = milligrams / cubic meter, ppm=parts per million

According to the California Climate Change Center, average temperatures in California are expected to rise by 3.0 to 10.5 degrees Fahrenheit by the end of the century. Rising temperatures present a number of challenges, including higher sea levels due to thermal expansion and melting ice, a decline in the Sierra snowpack, displacement of plant and animal species, and greater frequency of extreme weather events. The decline in the snowpack will directly impact Albany's water supply as well as water quality. Rising sea levels will directly impact the Albany shoreline.

In 2006, the California legislature approved Assembly Bill 32—the Global Warming Solutions Act. AB 32 requires California to reduce GHG emissions to 1990 levels by 2020, an approximately 15 percent reduction from 2005 emission levels. AB 32 was followed by other legislative and executive actions which established California as a leader in addressing climate change issues. These actions include adoption of SB 375 in 2008, which requires the state's urban areas to grow in a way that is less dependent on fossil fuels. As a result of SB 375, cities are improving their bicycle and pedestrian systems, investing in mass transit, and focusing new development around transit stations and transit corridors.

Albany estimated its greenhouse gas emissions as 69,830 metric tons of carbon dioxide equivalent ($MTCO_2e$) in 2004.[1] About one third of this total was associated with transportation, and just less than one third each was associated with residential energy use and commercial-industrial energy use. The remainder was associated with waste disposal and water consumption. The estimates exclude emissions from the freeways, since City policies cannot control freeway travel patterns. When freeways and other state highways are factored in, transportation accounts for 72 percent of Albany's greenhouse gas emissions.

If Albany "did nothing" and let current trends continue, it has estimated that its emissions would increase to 72,000 $MTCO_2e$ by 2020 and 85,100 $MTCO_2e$ by 2050. In 2010, Albany adopted a Climate Action Plan (CAP) to avoid such increases and instead reduce local emissions. The CAP outlines a course of action to reduce greenhouse gases to 25 percent below 2004 levels by 2020, reaching a target of 52,400 $MTCO_2e$ by that year. Through this General Plan, Albany is setting a further reduction target of 60 percent below 2005 levels by 2035. Key strategies for achieving this goal are discussed later in this chapter.

California Executive Orders on Greenhouse Gas Emissions

In 2005, California's Governor Arnold Schwarzenegger signed Executive Order S-3-05, setting the following targets for reducing GHGs in California:

- By 2010, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80 percent below 1990 levels

In 2015, Governor Jerry Brown signed Executive Order B-30-15, establishing an additional reduction target of reducing GHG emissions to 40 percent below 1990 levels by 2030. The state also adopted SB 350 in 2015, requiring that 50 percent of all electricity generated in California be from renewable sources by 2030.

[1] *Albany Climate Action Plan, 2010. The unit of measurement ($MTCO_2e$) refers to "metric tons of carbon dioxide equivalent" and includes multiple types of greenhouse gases. The idea is to express the impact of each different greenhouse gas in terms of the equivalent amount of CO2 that would create the same amount of warming.*

F. PLANT AND ANIMAL RESOURCES

Habitat Types

There are 11 distinct vegetation types within Albany, excluding areas that are permanently submerged. As indicated in Table 7-2, almost two thirds of the area within the city limits consists of surface water and wetlands, with more than half of the city in San Francisco Bay itself. The upland portion of the city is primarily classified as urban habitat, with pockets of grassland, coast live oak woodland, eucalyptus woodland, and riparian woodland.

Urban habitat comprises about 88 percent of Albany's land area, including its neighborhoods, business districts, institutional properties, and roads. Such areas are characterized by a mix of native and non-native vegetation, with wildlife that has adapted to an urbanized landscape. Animals such as raccoons, opossums, deer, skunk, and squirrels are common. Numerous bird species are present, and several reptile and amphibian species may occur.

The street tree canopy in Albany is substantial, although not as extensive as it could be. The City supports the expansion of Albany's "urban forest" in the coming decade and has developed a list of climate-appropriate trees and a process for street tree planting and replacement. Trees are an important part of the City's climate action strategy. In addition to their aesthetic value, trees offer shade, absorb greenhouse gases, decrease urban runoff, and provide habitat for birds and other wildlife.

Several plant communities are present on Albany Hill. Coast live oak woodland occurs on the northern and eastern slopes of the Hill, and along the banks of the City's creeks. Coast live oaks dominate the canopy in these areas, with other species such as bigleaf maple, arroyo willow, California bay, California buckeye, and coast redwood present.

Eucalyptus woodland is the dominant plant community on the west side of the Hill. This plant community also occurs in pockets at Albany Beach, Golden Gate Fields, St. Mary's College High School, and along Village Creek at University Village.

Table 7-2: Acreage of Vegetative Cover in Albany

Habitat Type	Acres	Percent of Total[1]
Land		
Urban	980	86.7%
Grassland	35	3.1%
Coast Live Oak Woodland	8	0.7%
Eucalyptus Woodland	35	3.1%
Mixed Riparian Woodland	8	0.7%
Ruderal	53	4.7%
Agriculture	8	0.7%
Beach/Sand Dune	3	0.3%
Total	**1,130**	**100.0%**
Tidal Areas		
Tidal Mudflat	143	
Salt Marsh	13	
Total	**156**	
Open Water		
Bay	1,827	
Pond	6	
Creek	2	
Total	**1,835**	
Grand Total	**3,121**	

Source: LSA Associates, 2014

Note: (1) Percentages are based on land area and exclude tidal and water areas

Photo: Doug Donaldson

Mudflats along the Albany shoreline

Many of the same species present in urban areas are also present on Albany Hill. The eucalyptus and oak trees provide nesting habitat for raptors such as red tailed hawk and red shouldered hawk. Songbirds also nest in these areas.

Codornices and Cerrito Creeks are characterized as riparian woodland, with tree species that have adapted to stream banks and flood plains. Common trees include willow, buckeyes, bay laurel, eucalyptus, and redwood. The understory is dense and often includes blackberry, ivy, and coyote brush. Vegetation in these areas supports small mammals, birds, and reptiles, while the creeks themselves support a fish and amphibian population. Riparian vegetation is also present along stretches of Village and Middle Creeks.

The Albany waterfront includes both upland and wetland plant communities. A large expanse of grassland covers the Albany Plateau north of Golden Gate Field. A small sandy beach and dune system is present just beyond the west end of Buchanan Street There are only a limited number of such beaches and dunes along the Bay, and they are an important resource for roosting and foraging shorebirds.

The area to the north of the Albany Neck includes a large salt marsh and tidal mudflat. This is a highly productive plant community consisting of salt-tolerant plants such as cordgrass and pickleweed. Shorebirds such as gulls, cormorants, and ducks are common, and hawks, owls, and other birds of prey roost and forage in this area.

The waterfront also includes small pockets of freshwater and seasonal wetlands. These areas are associated with freshwater seeps and creek sections where tidal influence is minimal. Dense cattails, willow, and flat sedge are common, as are various non-native grasses. Another habitat associated with the waterfront is classified as "ruderal," which corresponds to artificial or disturbed landscapes. This includes Fleming Point and much of the Albany Neck and Bulb. Species occurring in these areas include coyote brush, coast live oak, arroyo willow, acacia, thistle, French broom, and poison oak, among others. Various amphibians, reptiles, and mammals inhabit this area, occasionally using construction debris and rip rap to provide cover.

There are 1,835 acres of open water in the Albany city limits, including both freshwater and salt water areas. Fresh water habitat includes the ponds at Golden Gate Fields. Salt water habitat includes tidal sloughs and the open waters of San Francisco Bay. Surface waters provide foraging habitat for shorebirds, and a variety of estuarine fish species such as bat ray, leopard shark, northern anchovy, topsmelt, American shad, and striped bass.

Special Status Species

Approximately 30 species that are known to occur or that potentially occur in the Albany area have been identified by federal or state natural resource agencies as warranting special protection. These include species that have been designated as threatened, endangered, protected, or species of special concern by the US Fish and Wildlife Service or the California Department of Fish and Wildlife. Some of these species may occasionally pass through or forage within the Planning Area, but are not known or expected to breed locally. Table 7-3 highlights those species of greatest local interest.

One of the species listed in Table 7-3 is the Monarch butterfly. The eucalyptus groves on Albany Hill, along Codornices Creek, and on University Village have sheltered roosting butterflies in the past. Monarchs are not a state or federally protected species, but California law recognizes their winter colonies as "special resources." Roost sites are typically characterized by large, mature trees that provide protection from wind.

Another local species of interest is steelhead, a federally threatened fish known to be present in Codornices Creek. Steelhead appear to be surviving in the creek despite the surrounding development and poor water quality. Although Codornices Creek is not classified as "critical habitat" by state and federal resource agencies, improvements to water quality and protection of creek habitat are strongly supported by the City.

Local creeks and wetlands provide potential habitat for other threatened species, although these species have not been documented within Albany in recent years. This includes the California red-legged frog, which inhabits freshwater marshes and streams, and the western pond turtle, which inhabits ponds, lakes, creeks, and marshes. Both of these species have been identified at locations within five miles of Albany, but not in the city itself.

Most of the species of special concern that are potentially present in Albany are birds. The Albany waterfront provides suitable habitat for the white-tailed kite, northern harrier, California black rail, California clapper rail (Ridgway's rail), California least tern, loggerhead shrike, San Francisco common yellowthroat, and Bryant's savannah sparrow. Many of these species have been observed in the marshes and mudflats between Richmond and Emeryville. The Alameda song sparrow has been observed at Middle and Cerrito Creeks, an d near the mouth of Codornices Creek.

The Albany waterfront also contains suitable habitat for burrowing owls, a California Species of Special Concern that has experienced substantial population decline due to loss of habitat. Burrowing owls may occur in open grasslands with small mammal burrows, particularly those of California ground squirrels. The species has been observed wintering at the Albany Bulb and at Cesar Chavez Park in Berkeley. An 8-acre area at the Albany Plateau (north of Golden Gate Fields) was fenced off in 2008 to create artificial habitat for the owls, although no burrows had been occupied as of 2015.

There are several protected mammals that also could potentially be present in Albany. The salt marsh harvest mouse is endemic to the tidal marshes of San Francisco Bay, especially in pickleweed marshes and nearby uplands. The mice are not likely to occur locally, but have been observed at the Emeryville Crescent to the south and Wildcat Creek Marsh five miles to the north.

Table 7-3: Special Status Wildlife Species Potentially Present in Albany[1]

Species	Status[2]	Comments
Invertebrates		
Monarch butterfly –Winter colony	(3)	Winter colony sites have been regularly documented in eucalyptus trees on Albany Hill between 1991-2015, and in trees near University Village in January 1998.
Fish		
Steelhead	FT	Species known to occur in Codornices Creek. Suitable spawning habitat present in sections where cobbled stream beds occur.
Amphibians and Reptiles		
Western pond turtle	CSC	Portions of Codornices, Middle, and Cerrito creeks provide suitable breeding or resident habitat. Four occurrences recorded within 5 miles of Albany.
California red-legged frog	FT/ CSC	Not known to occur in or near Albany. Creeks within Albany do not provide high quality habitat. Closest recorded occurrences are over 3 miles away.
Birds		
California brown pelican	FD/SD /CFP	May forage and roost in the shallow sub-tidal portions of the Albany waterfront, but does not breed in San Francisco Bay. Individuals may occasionally roost at Fleming Pt.
American peregrine falcon	FD/SD /CFP	May forage over the shoreline but not expected to nest due to lack of suitable nest sites. Known to forage at Albany mudflats.
White-tailed kite	CFP	Marginal nesting and foraging habitat present at Albany Bulb, University Village, Albany Hill, and along the creeks.. This species has been observed at University Village.
California black rail	ST/CFP	May occur in tidal marsh habitat along the Albany waterfront. Closest recent CNDDB occurrence is approximately 3.5 miles south of the Planning Area in Emeryville.
California clapper (Ridgway's) rail	FE/SE/ CFP	May occur in tidal marsh habitat along the Albany waterfront. Known to occur in the Richmond Inner Harbor, in the Emeryville Crescent Marsh, and at Wildcat Creek Marsh.
Western snowy plover	FT	Not known to breed within the Planning Area, but could forage on tidal mudflats. No suitable nesting habitat present.
California least tern	FE/SE/ CFP	Occasionally forages over Bay waters in Planning Area between April and July. Observed nesting on created shell islands just south of Central Avenue in El Cerrito in 2000.
Burrowing owl	CSC	Wintering individuals may occasionally use concrete rip-rap along the Albany shoreline. Has been observed wintering at scattered locations in Albany and vicinity.
Loggerhead shrike	CSC	May nest and forage within the ruderal scrub habitat along the Albany waterfront, particularly at the Albany Plateau.
San Francisco common yellowthroat	CSC	Suitable nesting habitat present within tidal marsh, scrub, and riparian habitat habitats. Observed along the Albany shoreline near the Codornices Creek outfall in 2000 and 2001.
Bryant's savannah sparrow	CSC	May nest and/or forage in salt marsh and ruderal vegetation along the Albany waterfront. Observed at the Albany Plateau.
Alameda song sparrow	CSC	Observed at Middle and Cerrito Creeks. Likely occurs at Codornices Creek and along the Albany waterfront.
Mammals		
Salt-marsh harvest mouse	FE/SE/ CFP	Not expected to occur due to lack of high quality tidal marsh habitat. Known to occur about 3 miles south in the Emeryville Crescent and 5 miles north at Wildcat Creek.
Pallid bat	CSC	Suitable roosting habitat present in large trees and snags on Albany Hill or along the creeks. No recent (after 1970) state-documented occurrences within 5 miles.
Townsend's big-eared bat	SCT/ CSC	Suitable roosting habitat present in large trees and snags on Albany Hill or along the creeks. Nearest state-documented occurrence is at Angel Island.

Source: LSA Associates, 2014; California Natural Diversity Data Base (CNDDB, 2014)

Notes: (1) List excludes fish species such as sturgeon and chinook salmon which may pass through Albany's Bay waters, bird species such as bald eagle and golden eagle which may pass through the area but are unlikely to roost or nest in Albany, and other special status species deemed unlikely to be present based on lack of suitable habitat.
(2) FE= Federally endangered, FT= Federally threatened, FD=Federally delisted, SE= State endangered, ST= State threatened, SCT= State candidate threatened, SD= State delisted, CSC=California Species of Special Concern, CFP= California Fully Protected Species.
(3) Winter colonies recognized by CDFW as a sensitive habitat in California.

The pallid bat and Townsend's big-eared bat have been observed in the Central Bay Area, although not in Albany and in not in recent years. The large trees on Albany Hill and along the creeks could be potential roosting areas.

There are also a substantial number of special status plant species that occur in Albany or that are considered to have a high or moderate potential of occurring based on the presence of suitable habitat. Much of this habitat is associated with Albany's tidal mudflats, which is classified as a State Marine Reserve by the California Department of Fish and Wildlife. This area supports California sea lavender, California cordgrass, and sand spurry—all classified as "locally rare" plants. It could potentially support other special status plants, such as Point Reyes salty bird's-beak, seaside golden yarrow, low bulrush, and hedge nettle. Several significant plants on the East Bay California Native Plant Society's watch list also occur on Albany Hill, including red fescue, big squirreltail grass, gumplant, golden aster, California Melic grass, purple needlegrass, and marsh bristlegrass.

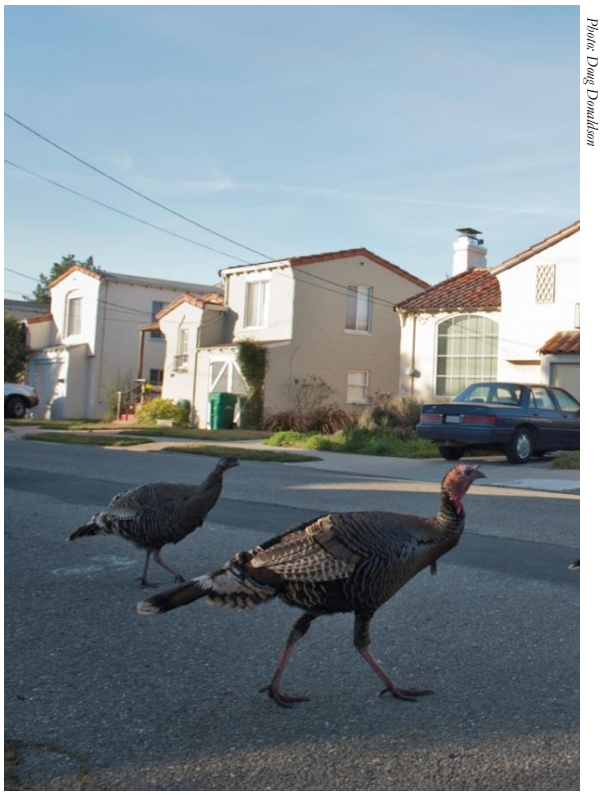


Photo: Doug Donaldson

Wild turkeys on an Albany street

G. SUSTAINABILITY AND CLIMATE ACTION

Overview

Albany has a long tradition of environmental activism. Even the City's incorporation in 1908 was a response to an environmental issue—the dumping of trash in the community. Albany residents were early leaders in efforts to save San Francisco Bay and create the Eastshore State Park. The City pioneered creek restoration and protection programs in the 1970s and has supported recycling, composting, energy conservation, and water conservation programs for over four decades. Albany was the first community in Alameda County to divert more than 75 percent of its solid waste from landfills, and today has one of the highest rates of bicycle, pedestrian, and public transit commuting in the Bay Area.

Since 2007, the City has had a Sustainability Committee to advise the City Council on policies and strategies to reduce the consumption of non-renewable natural resources and related greenhouse gas emissions. In 2010, the City adopted a Climate Action Plan (CAP). While the focus of the CAP is on measures to reduce greenhouse gases, the Plan also provides a coordinated set of strategies promoting more sustainable living. The strategies are broadly described below.

Transit-Oriented Development

For generations, the Bay Area grew by expanding outward at low densities, consuming large amounts of agricultural land and making many communities dependent on automobiles for most trips. This pattern of growth has proven unsustainable and has led to congested freeways, air pollution, and loss of productive farmland. Today, new ways of planning for future regional growth are being promoted.

This General Plan directs Albany's future development to sites where public transit is readily available, and where services such as shopping, restaurants, and schools are within a short walk or bicycle ride. While it is likely that people living and working in such developments may still own cars, they are also likely to own fewer cars than they would in low density subdivisions. Options such as car-sharing, bicycling, and walking will be readily available for short trips.

Albany does not have a BART station within its borders, but is a short bike ride from the El Cerrito and North Berkeley stations. San Pablo and Solano Avenues both have frequent bus service and provide transit connections to BART and major shopping and work destinations. Roughly two-thirds of the housing potential identified in this General Plan is associated with underutilized sites along these two avenues. The City's zoning standards support higher densities on these sites, as well as ground floor commercial uses that serve nearby residents.

Reducing Vehicle Miles Traveled

Albany's Climate Action Plan concludes that some of the greatest reductions in local greenhouse gas emissions will come from changes in travel patterns and travel modes. The 2010 CAP states the City's intent to eliminate the equivalent of 4,665 metric tons of carbon dioxide a year by 2020 by reducing vehicle emissions, facilitating walking and biking, and making public transit more convenient and user friendly.

The Transportation Element of this General Plan includes policies and actions to achieve more sustainable transportation behavior. This includes the development of bicycle boulevards on Adams Street and Kains Avenue, and the redesign of Buchanan Street and San Pablo Avenue as "Complete Streets" with new crosswalks, wider sidewalks, bike racks, and dedicated bicycle lanes. The City is also encouraging expanded use of electric and zero-emission vehicles, car sharing, carpooling, telecommuting, transit passes, and other measures to reduce fossil fuel consumption.

Title 24 Energy Efficiency Standards

In 1978, California adopted new energy efficiency standards commonly referred to as Title 24. The standards are periodically updated to incorporate new energy efficiency technologies and methods. As a result of Title 24 standards, homes built within the last decade are 4.5 times more energy efficient per square foot than homes built prior to 1960. Census data indicates that 66 percent of Albany's housing units and 69 percent of its commercial buildings were constructed prior to 1960. Many of these buildings have inefficient heating, ventilation, cooling, and lighting systems. A high level of energy savings will be achieved in the future through retrofit and energy efficiency projects.

Green Building

Albany's 2010 Climate Action Plan concluded that the implementation of specific building and energy strategies could reduce the City's greenhouse gas emissions by the equivalent of 8,600 metric tons of carbon dioxide a year by 2020. Most of these strategies involve the use of green building methods in new construction and renovation projects.

Green buildings are designed to minimize negative impacts on the environment and enhance the well-being of their occupants. In practical terms, this means using salvaged and sustainably harvested materials; siting buildings to take advantage of the potential for natural heating, cooling, and lighting; incorporating energy and water efficiency measures; landscaping with native plants; and maintaining healthy indoor air quality. The US Green Building Council has established the Leadership in Energy and Environmental Design ("LEED") system as a way of rating green buildings based on these and other criteria.

The City of Albany has adopted Green Building Standards of Compliance, including checklists to evaluate building performance. More recently, the State of California has passed green building standards that have been adopted at the local level. The City will continue to evaluate its building standards as technology evolves and as new sustainable building methods become available.

Energy Conservation and Efficiency

Many of the City's climate action strategies incorporate energy efficiency and conservation measures. The City has conducted energy audits and made energy efficiency improvements to its own buildings, including City Hall. More substantial reductions in energy use will come from the private sector, particularly through measures implemented by homeowners and businesses. Programs such as East Bay Energy Watch and Energy Upgrade California are increasing awareness of energy efficiency and providing a resource for Albany residents.

Albany is participating in several Property Assessed Clean Energy (PACE) financing programs. PACE enables homeowners to implement energy efficiency measures, solar installations, seismic upgrades, and water efficiency upgrades using loans that are repaid through property tax bills.

The City is considering ordinances that will require or encourage property owners to participate in energy assessments or upgrades. It may also consider a program that requires energy efficiency upgrades at point of sale.

Renewable Energy Use

Albany receives natural gas and electricity from Pacific Gas and Electric Company (PG&E). In 2013, approximately 22.5 percent of PG&E's energy came from renewable sources such as solar, geothermal, and wind power. The utility has plans to increase this share to meet the state's 33 percent clean energy target by 2020.

At the local level, the City is exploring the concept of Community Choice Aggregation (CCA). CCA allows public agencies such as the City of Albany to procure electric power on behalf of utility customers, while the transmission, distribution, repair, and billing continue to be done by PG&E. The advantage of such a system is that the City can increase the share of clean energy beyond the state target, and reduce associated greenhouse gas emissions. Revenues from electricity customers can be used for additional renewable energy projects. The City also supports the installation of photovoltaics and other measures to capture local energy resources, reduce utility demand, and move closer to zero net energy buildings.

Low Impact Development

Low Impact Development (LID) refers to strategies to reduce stormwater runoff and protect water quality. One of the basic tenets of LID is to avoid net increases in runoff volumes and rates. Since Albany is already almost fully developed, applying LID principles in new construction could potentially result in net decreases in urban runoff rates and improved water quality in the City's creeks. This can be achieved by increasing reducing paved surfaces, using porous pavement, and avoiding excessive coverage by structures. Development can be designed to retain storm-water on site, allowing it to percolate to the aquifer or be used for landscaping. Landscape features such as bioswales can filter out pollutants and restore natural hydrologic functions.

Water Conservation and Reclaimed Water Use

Water has always been a precious resource in California. The threat of climate change and a reduced Sierra snowpack makes it even more imperative to conserve water and explore new sources to meet future needs. In some comm-unities, water conservation also provides greenhouse gas benefits, since water transport and pumping consume energy which in turn generates carbon emissions. Energy is also used during water heating, cooling, pressurization, and treatment. Reduced water use can result in reduced energy use as well.

In Albany homes, the largest uses of water are toilets, washing machines, showers, and faucets. Water leaks account for approximately 8 percent of all water use. With relatively minor upgrades to faucets, fixtures, and appliances, residents could save considerable amounts of water. East Bay Municipal Utility District (EBMBUD) offers its customers a variety of rebates for water efficiency improvements.

Landscaping is another major water user. The City adopted an ordinance requiring Bay-friendly landscaping practices in 2006, including the use of drought-tolerant plants and reduced use of toxic pesticides. An update to this ordinance is underway. Graywater and rainwater collection systems can also provide alternatives to using potable water for lawns and gardens. Graywater systems collect water from bathroom sinks, showers, and washing machines and allow that water to be applied to landscaped areas. This can reduce 45 percent of a typical single family home's wastewater output. Rainwater can also be collected via roof gutters and stored in cisterns or collection barrels for reuse.

EBMUD partnered with Albany to install recycled water lines in Buchanan Street from Pierce Street to San Pablo Avenue. An additional pipieline is planned on Marin Avenue, eventually extending east to the Ohlone Greenway. The reclaimed water system transports high quality treated wastewater effluent from the treatment plant near the Bay Bridge for reuse in landscape irrigation, industry, and other non-potable applications.

Extension of the system requires the installation of separate reclaimed water lines, which is a substantial capital expense. EBMUD's East Bayshore project will supply an annual average of 2.5 million gallons per day of recycled water to portions of Alameda, Albany, Berkeley, Emeryville, and Oakland. Additional funding will be required to complete the distribution system.

Solid Waste Reduction

Reducing the amount of landfilled solid waste provides multiple environmental benefits. Landfills are a source of methane and other greenhouse gas emissions. They also have limited capacity, which necessitates waste reduction and diversion strategies. Reducing landfilled waste also helps to conserve natural resources by encouraging recycling and the use of recycled products. In addition, composting of solid waste can provide beneficial byproducts such as mulch and soil amendments.

In 1989, the California legislature required cities throughout California to adopt the goal of diverting at least 50 percent of their solid waste from landfills through recycling, composting, and waste reduction programs. Albany achieved that goal in 2004. In 2007, the City joined other Alameda County communities to adopt a target of diverting 75 percent of local waste from landfills by 2010. Albany was the first city in the county to achieve this target, reaching an 84 percent diversion rate in 2012. The State of California has since adopted a 75 percent diversion goal, with 2020 as the target year for achievement.

Solid waste collection services are provided to Albany through a franchise agreement (through 2021) with Waste Management of Alameda County. Waste and recyclable goods are currently transported to the Davis Street Transfer Station in San Leandro. Non-recyclable waste is transported to the Altamont Landfill east of Livermore, while construction debris is transported to the Vasco Road landfill. Recyclable materials, such as glass, aluminum, tin, cardboard, plastic and paper, are processed at the Transfer Station for distribution to vendors.

Recent solid waste reduction programs have included food waste collection, mandatory construction and demolition debris recycling, and e-waste recycling. Albany is also implementing composting programs and mandatory recycling for multi-family buildings and commercial businesses, as required by State law. The City participates in special waste collection events, household hazardous waste collection programs, pharmaceutical disposal programs, and other initiatives which reduce landfilled waste.

The simplest way to reduce waste is to consume less. The City supports lowering consumption levels and purchasing climate-friendly and recycled products. Reusing or purchasing second-hand items, and sharing goods with friends and neighbors can diminish waste volumes and reduce greenhouse gas emissions.

Green Infrastructure

Green infrastructure refers to the creeks, wetlands, riparian areas, and other natural systems that enable a community to function, particularly with respect to drainage. The benefits of a well-managed, sustainable green infrastructure system have been described throughout this chapter. The City's street trees are a particularly important component of this system. In particular, trees sequester carbon and reduce building-related energy emissions by providing shade. The City's Climate Action Plan established a target of planting 500 trees a year between 2010 and 2020.

Food and Agriculture

Agriculture, food processing, and the transportation of food rely heavily on fossil fuels and are responsible for a large amount of global greenhouse gas emissions. This is particularly true when forested land is cleared for agriculture or grazing, and when food is transported by air. In addition, the livestock and dairy industries generate large quantities of methane, while agriculture fertilizers release nitrous oxide into the atmosphere.

While one's diet is a matter of personal choice, residents can make more informed decisions about the food they eat and how and where it is produced. Eating locally grown or minimally processed foods can make a small but cumulatively important difference on greenhouse gas emissions. In this light, Albany strongly supports community food security and providing residents with the ability to grow produce within the city.

There are currently three community gardens in Albany, located at Ocean View Park, Memorial Park, and University Village. Food is also produced at the Gill Tract experimental farm on University Village. Looking to the future, the City supports expanded community gardening and urban agriculture opportunities. This could include the planting of fruit trees on the Ohlone Greenway, as well as City and School gardening programs.

Environmental Education

One of the most important elements of the City's sustainability and climate action program is to increase public awareness of climate change and resource conservation issues. The City and partner agencies such as the School District and Alameda County are implementing environmental education initiatives aimed at residents of all ages.

The City sponsors an annual Arts and Green Festival, coordinates creek clean-ups and coastal clean-up events, conducts "fix-it" clinics and household hazardous waste collection events, hosts compost give-aways, and even holds a citywide garage sale to encourage the reuse of unwanted items. Environmentally-oriented workshops, classes, surveys, and special events are critical to building community investment and support for sustainability initiatives. The City itself can be a role model for the public, and is leading the way by "greening the government" through its procurement policies and operating procedures.

Signage along Cerrito Creek

H. GOALS, POLICIES, AND ACTIONS

GOAL CON-1: PROTECTION OF NATURAL FEATURES

Protect and enhance the natural features that define Albany's environment, including the waterfront, wetlands, creeks, and Albany Hill.

POLICIES

Policy CON-1.1: Reducing Environmental Impacts
Ensure that new development is sensitive to environmental conditions and reduces impacts on the natural environment to the greatest extent feasible.

Policy CON-1.2: Erosion and Soil Management
Require that construction, grading, retaining walls, infrastructure maintenance, and other earth moving activities use best management practices to reduce erosion, sedimentation, and soil loss.

Policy CON-1.3: Conservation of Albany Hill
Protect and restore natural features, native vegetation, and wildlife on Albany Hill.

See also Policies 1.6 and 6.7 in the Parks, Recreation and Open Space Element regarding preservation of Albany Hill as open space, protection of important views and vistas, and improved access to the Hill.

Policy CON-1.4: Albany Waterfront
Protect and sustain the Albany waterfront and surrounding wetlands as a natural and cultural resource, a vital ecosystem, a place of scenic beauty, and a defining feature of Albany's physical environment.

See the Waterfront Element for additional policies on the Albany waterfront.

Policy CON-1.5: Environmental Education
Improve public education and awareness of Albany's environment, including the characteristics of its shoreline and marshlands, its plant and animal communities, the creeks and watersheds, and its natural landscape.

Policy CON-1.6: Respecting Natural Features
Design new development to conserve natural landscape features, such as topography, drainage patterns, and vegetation. Avoid projects which require excessive hillside grading, rerouting of streams and drainageways, filling of wetlands, and other alterations which compromise natural resources.

Policy CON-1.7: Creek Restoration
Enhance the natural characteristics of Albany's creeks and uncover and restore ("daylight") portions of creeks that have been placed in underground culverts and pipes where feasible.

Policy CON-1.8: Creek Access
Improve public access to Albany's creeks, particularly where land adjacent to the creek is in public ownership and opportunities for linear trails or connections to parks may exist.

Policy CON-1.9: Riparian Corridors
Maintain special development regulations for areas within 100 feet of Codornices Creek, Cerrito Creek, and Village Creek which ensure that riparian and littoral habitat is conserved, flood impacts are reduced, and the creeks are enhanced for their aesthetic and ecological value. Watercourses on private property should be kept free of trash, debris, excessive vegetation, and obstacles to the flow of water.

See also Policy CON-4.3 on the use of stormwater management programs to filter pollutants from urban runoff.

Policy CON-1.10: Adaptation
Work collaboratively with surrounding jurisdictions and regional agencies on adaptation planning for rising sea level along the Albany shoreline, including any future reuse plans for Golden Gate Fields. Ensure that land use and capital improvement decisions for the shoreline area consider long-term sea level projections.

IMPLEMENTING ACTIONS

Action CON-1.A: Codornices and Cerrito Creek Restoration Initiatives
Continue collaborative efforts with community organizations, resource agencies, and adjacent cities to restore natural conditions and stabilize banks along Albany's creeks, particularly Codornices and Cerrito Creeks.

Action CON-1.B: Watercourse Combining District
Review the Watercourse Combining District zoning regulations to ensure that they sufficiently protect riparian habitat, reduce erosion and flooding hazards, and mitigate impacts of development on creek ecology. Compliance with all applicable state and federal regulations also shall be required for any project that could potentially impact the city's creeks.

Action CON-1.C: Creeks at UC Village
Work with the University of California and the developers of projects on the UC Village property to maintain undeveloped open space easements along Village Creek and along Codornices Creek, and to plan for the restoration of the creeks as adjacent properties are developed or altered.

Action CON-1.D: Creek Clean-Ups
Support community-led creek clean-ups and restoration efforts, and enforcement of development agreements and approval conditions related to creek clean-up and maintenance.

Action CON-1.E: Construction Impacts on Creek Wildlife
Ensure that large-scale construction activities adjacent to Codornices and Cerrito Creeks consider potential impacts on special status species, including steelhead, California red-legged frog, and western pond turtle. Pre-construction surveys shall be completed as required by CEQA. In the event that such surveys determine the potential for impacts to special status species, a protection plan shall be prepared and implemented to avoid and mitigate potential impacts, and a post-construction management plan shall be implemented to avoid future impacts.

Easterly view from Albany Hill

GOAL CON-2: URBAN FORESTRY AND AGRICULTURE

Expand Albany's urban forest and capacity for local food production.

POLICIES

Policy CON-2.1: Trees and the Environment
Recognize the importance of trees and vegetation to improving air and water quality in the City and contributing to local efforts to reduce global climate change.

Policy CON-2.2: Tree Preservation
Encourage the preservation of mature trees during the review of development proposals and subsequent construction projects. Site design and construction plans should identify individual trees and groves of trees and include measures to protect them where feasible. When tree preservation is not feasible, the City may require replacement trees and ongoing maintenance measures to avoid net loss of tree coverage.

Policy CON-2.3: Tree Planting
Undertake street tree planting and maintenance programs to beautify the City, create shade, provide habitat for birds and other animals, and enhance the built environment.

Policy CON-2.4: Bay Friendly Landscaping
Encourage and where appropriate require bay-friendly and drought-tolerant landscaping to enhance aesthetics, buffer residences from noise and air pollution, create privacy, reduce wind, and provide habitat.

Policy CON-2.5: Albany Hill Vegetation Management
Protect the remaining native plant communities on Albany Hill. Vegetation on the Hill should be managed in a way that gradually reduces the extent of the eucalyptus forest and encourages native plants to return.

Policy CON-2.6: Hazardous Trees
Remove trees that threaten human safety due to unstable growth, disease, hazards to life and property, or serious fire danger. In wildland areas such as Albany Hill, remove understory debris and fire ladders to reduce fire hazards and improve trail access.

The Albany Hill Creekside Master Plan may be consulted for further direction on management, removal, and replacement of trees on Albany Hill.

Policy CON-2.7: Private Tree Planting
Encourage residents and businesses to undertake private tree planting and landscapes which absorb greenhouse gases.

Policy CON-2.8: Community Gardens
Encourage the creation of community gardens in Albany, and the use of open land for food production and urban agriculture. A variety of locations should be considered including parks, school yards, university lands, and other public and private properties.

Policy CON-2.9: Food Production and Transportation
Promote local food production, urban agriculture, farmers markets, farm-to-table restaurants, and more sustainable methods of growing and transporting food. Local food production can reduce transportation associated with food, thereby reducing food costs and greenhouse gas emissions and promoting public health.

IMPLEMENTING ACTIONS

Action CON-2.A: Street Tree Planting
Continue implementation of a comprehensive street tree planting and maintenance program for Albany streets, including priorities, time schedules, and species selection guidelines. Seek funding through state, federal, and non-profit urban forestry programs to support increased tree planting and maintenance capacity.

Consideration should be given to developing a "tree palette" identifying specific tree species to be planted along major streets. This can create unity and a stronger sense of place along the city's thoroughfares. The City's tree policies should be coordinated with the City's sidewalk policies to minimize the potential for future sidewalk damage and create conditions conducive to walking.

See the Park, Recreation, and Open Space Element for additional guidance on tree planting standards.

Action CON-2.B: Tree Preservation Requirements
Continue to study alternatives for protecting large specimen trees and addressing tree removal and preservation issues on private property, including the pros and cons of a heritage tree policy.

Action CON-2.C: Tree Inventories
Implement standard operating procedures requiring inventories of trees and significant site vegetation as a part of development application review.

Action CON-2.D: Creekside Master Plan Implementation
Implement the vegetation management prescriptions of the Albany Hill Creekside Master Plan, and periodically update the Plan as conditions change.

Action CON-2.E: Green Albany Plan
Prepare a "Green Albany" Plan to evaluate areas in the City for carbon sequestration and enhancement of the tree canopy, and for potential "green streets" enhancements.

Action CON-2.F: Replacement of Hazardous Trees
Continue to implement measures for replacing sick, dying, or hazardous trees with replacement trees.

Action CON-2.G: Native Plant Restoration
Preserve and enhance native plant communities in the city while encouraging the control or removal of invasive and non-native species.

Photo: Doug Donaldson

Albany's street trees provide shade, beauty, and habitat while removing greenhouse gases and absorbing urban runoff.

GOAL CON-3: REGIONAL LEADERSHIP IN CLIMATE AND SUSTAINABILITY

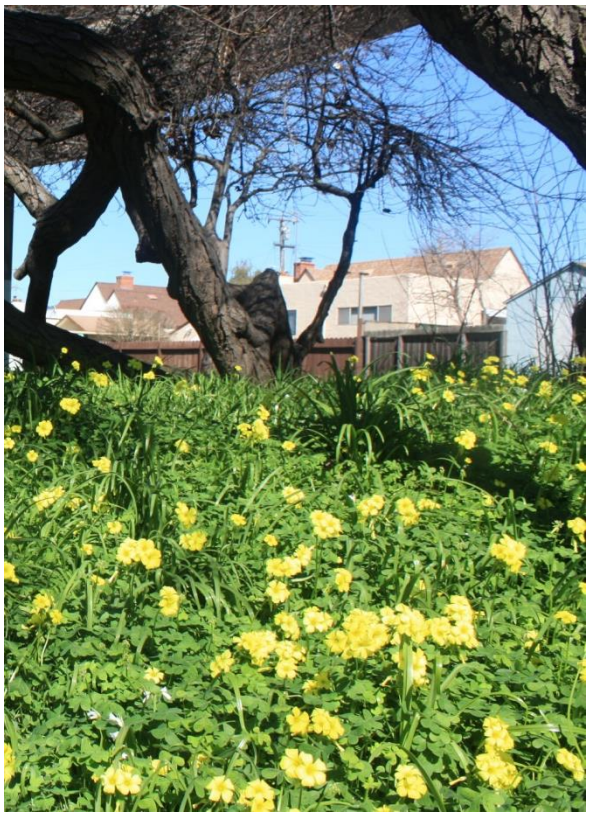
Be a regional leader in efforts to reduce the effects of global climate change, improve air quality, and promote sustainable growth.

POLICIES

Policy CON-3.1: Greenhouse Gas Reduction
Undertake local programs to support net zero greenhouse gas emissions by 2050 and a 60 percent reduction in emissions by 2035, relative to a 2004 baseline.

Policy CON-3.2: Climate Change as a Planning Consideration
Ensure that planning and development decisions consider potential impacts associated with global climate change, including rising sea levels and potential greenhouse gas emissions.

Policy CON-3.3: Climate Outreach
Develop outreach and education programs that increase awareness of global climate change and the steps Albany residents can take to reduce their carbon footprints.



Codornices Creek streambank

Policy CON-3.4: Land Use and Transportation Strategies
Implement the measures expressed in the Land Use, Transportation, and Housing Elements of the General Plan to achieve more sustainable development and travel patterns in Albany, including:

- An expanded, safer, and more accessible pedestrian and bicycle network that reduces dependence on automobile travel and creates more walkable and connected neighborhoods
- Greater emphasis on mixed uses along the San Pablo and Solano Avenue corridors, integrating residential uses above commercial uses and thereby reducing auto trips and trip lengths for goods and services
- A balance between job growth and housing growth, and more opportunities for residents to live closer to work
- Public transportation improvements (bus, BART, and possible future shuttle) which provide more viable alternatives to driving, including the possibility of an "infill" BART station at Solano Avenue
- Higher densities along the San Pablo corridor, enabling more development to be accommodated in the center of the region and reducing the necessity of developing "greenfields" on the periphery of the Bay Area
- Transportation demand management programs, including flextime, telecommuting, signal synchronization, carpooling, and other measures to reduce congestion and vehicle idling and cut down on solo passenger driving.

See the Land Use and Transportation Elements for policies on reducing Vehicle Miles Traveled and transportation-related strategies for improving air quality.

Policy CON-3.5: Sustainability and the Sharing Economy
Explore ways to incorporate elements of the "sharing" economy into strategies to reduce greenhouse gas emissions. This could include such activities as car-sharing, bike-sharing, home-sharing, and reduced consumption and waste made possible by sharing of consumer goods (tools, etc.),

Policy CON-3.6: Clean Air Plan Implementation
Participate in local, regional, and state efforts to implement the Bay Area Clean Air Plan and meet state and federal air quality standards.

Policy CON-3.7: Construction-Related Air Quality Impacts
Implement measures to reduce construction-related air pollution, especially particulate matter from earth movement, construction debris, stockpiled soil, and truck traffic.

Policy CON-3.8: Domestic and Commercial Air Emissions
Reduce air emissions associated with household and business activities such as gasoline-powered yard equipment and potential air contaminants from commercial and industrial processes.

Policy CON-3.9: Indoor Air Quality
Work proactively to reduce health-related problems caused by indoor air pollutants such as mold, second-hand smoke, wood smoke, and other fine particulates.

Photo: Doug Donaldson

Albany Hill

IMPLEMENTING ACTIONS

Action CON-3.A: CAP Progress Reports and Updates
Provide periodic progress reports on the implementation of Climate Action Plan (CAP) measures regarding building energy and water efficiency measures. Update the CAP at least once every five years to reflect the completion of specified actions, the development of new actions, the availability of resources and technology, and new targets for greenhouse gas reduction.

Action CON-3.B: Project-Level GHG Emission Analysis
Evaluate greenhouse gas (GHG) emissions associated with development proposals and work with applicants to reduce emissions during project review.

Action CON-3.C: Zero Emission City Vehicles
Improve the fuel efficiency of the City vehicle fleet by purchasing low emission or zero emission vehicles as vehicles are retired from service.

Action CON-3.D: Alternative and Electric Fuel Vehicles
Plan for and develop the infrastructure necessary for alternative fuel vehicles, including electric cars. This should include automobile charging areas for electric and plug-in hybrid vehicles. Incentives for such vehicles, such as preferential parking, should be developed.

Action CON-3.E: Air Quality Monitoring
Coordinate with adjacent cities and regional agencies such as the Bay Area Air Quality Management District and Caltrans to monitor air quality conditions along Interstates 80 and 580 and the Union Pacific Railroad.

Action CON-3.F: Air Quality and Public Health
Consider air-quality related public health risks when locating development along the I-80/580 corridor, or when approving projects with the potential to create air quality impacts. Periodically review BAAQMD data on air quality conditions and odor complaints to identify and address potential hazards.

Action CON-3.G: Construction Emissions
Require that future construction projects implement basic control measures consistent with BAAQMD recommendations, including those emissions related to fugitive dust and the operation of diesel powered equipment.

Action CON-3.H: Health Risk Assessments
Require Health Risk Assessments (HRAs) for future development projects resulting in new residential units within 500 feet of the I-80 or I-580 freeways and in other locations where warranted based on Bay Area Quality Management District criteria. HRAs shall be done in accordance with the latest State Office of Environmental Health Hazard Assessment and Bay Area Air Quality Management District guidelines, and shall mitigate impacts to levels deemed acceptable by these agencies.

Action CON-3.I: School District Coordination
Work collaboratively with AUSD on initiatives to promote sustainable building methods and operating practices in school facilities, increase awareness about climate change and greenhouse gas reduction among students and their parents, and to promote the achievement of the City's emission reduction targets.

GOAL CON-4: WATER QUALITY

Maintain and improve water quality in Albany's creeks, shoreline, and off-shore waters.

POLICIES

Policy CON-4.1: Stormwater Control
Eliminate non-stormwater discharges to the municipal storm sewer, and control potential discharges from spills, dumping, and urban runoff. Activities with the potential to cause or contribute to stormwater pollution shall comply with best management practices, guidelines, or requirements to reduce water quality impacts.

Policy CON-4.2: Water Quality Education
Increase public awareness of the sources of water pollution in Albany's creeks, such as dumping into storm drains, oil and grease runoff, and improper disposal of household chemicals.

Policy CON-4.3: Low Impact Development
Support the use of pervious pavement, rain gardens, bioswales, cisterns, roof drains directed to pervious areas, and other "low impact development" (LID) measures which capture and filter rainwater and reduce runoff to local creeks and the Bay.

Policy CON-4.4: Municipal Regional Permit
In compliance with the Clean Water Act, participate in the Alameda Countywide Clean Water Program and NPDES Municipal Regional Permit (MRP) to reduce stormwater discharges to local waterways and San Francisco Bay. In accordance with the MRP, ensure that post-runoff conditions on any development site shall not exceed pre-project rates and durations.

Policy CON-4.5: Watershed-Level Planning
Recognize local watersheds as a logical basis for planning and implementing water quality improvements. Increase awareness of watershed boundaries and the location of creeks and drainage courses in and around Albany.

IMPLEMENTING ACTIONS

Action CON-4.A: Trash Reduction Plan
Implement a Long-Term Trash Reduction Plan and Progress Assessment Strategy to reduce trash discharges to the storm sewer and carry out trash control measures such as street sweeping, litter control, and improved trash bin management.

Action CON-4.B: Stormwater Management Plans
Implement Provision C.3 of the Municipal Resources Permit which requires stormwater management plans, runoff control measures, and stormwater treatment on large development sites.

Action CON-4.C: Alameda Countywide Clean Water Program
Work collaboratively with Alameda County and nearby cities to implement the County Clean Water Program, including water quality monitoring, regulation of construction runoff, cleaning of storm drain inlets, education and outreach, and enforcement of illicit discharge regulations.

GOAL CON-5: BIOLOGICAL RESOURCES

Protect and enhance Albany's plant and animal habitat.

POLICIES

Policy CON-5.1: Habitat Protection
Ensure that development decisions, vegetation management plans, and open space plans enhance wildlife diversity, avoid wildlife disruption, and protect the habitat of rare, endangered, and special status species.

Policy CON-5.2: Coordination with State and Federal Resource Agencies
Work with the US Fish and Wildlife Service, the California Department of Fish and Game, the Regional Water Quality Control Board, the Bay Conservation and Development Commission, and other resource agencies to conserve and restore sensitive habitat areas. Refer local projects to these agencies for review and comment as appropriate.

Policy CON-5.3: Monarch Butterfly Roosting
Consider potential impacts to Monarch butterfly roosting sites on Albany Hill in any future applications for development, park expansion, trail construction, and fuel reduction on the Hill.

Policy CON-5.4: Albany Mudflats Ecological Reserve
Recognize the environmental value of the Albany Mudflats Ecological Reserve, located west of I-580 and north of Buchanan Street. Protect bird feeding and nesting areas by limiting activities in important habitat areas.

Policy CON-5.5: Migratory Birds
Require compliance with state and federal regulations protecting migratory birds and their nests from destruction or disruption.

Policy CON-5.6: Light Pollution
Reduce the intrusion of unwanted light and glare, particularly in settings where it may interfere with natural habitat.

IMPLEMENTING ACTIONS

Action CON-5.A: Environmental Review
Use the environmental review process as a way to identify important biological resources and mitigate potentially significant impacts on plants and animals associated with future projects. The City will ensure that qualified botanists or wildlife biologists are engaged in the planning and design processes for projects with the potential to impact special status plant and animal species, and will further require that potential impacts to these species are avoided and minimized, as required by CEQA.

Action CON-5.B: Habitat Restoration Plans
Support implementation of state and federal habitat restoration plans which increase the health of San Francisco Bay and bay wetlands.

Action CON-5.C: Resource Conservation Overlay Zones
As appropriate, consider the use of Resource Conservation Overlay districts to protect rare, endangered, or special status species.

Action CON-5.D: Monarch Butterfly Surveys
For construction projects that would affect eucalyptus, pine, and cypress groves during the period between September and March, require pre-construction surveys by a qualified biologist to determine if roosting Monarch butterflies are present. In the event winter colonies are identified, require appropriate measures to avoid impacts, such as postponing tree removal until butterflies have left or by designating buffer areas around the affected trees.

GOAL CON-6: ENERGY AND WATER CONSERVATION

Reduce energy and water consumption, thereby reducing greenhouse gas emissions and non-renewable resource depletion.

POLICIES

Policy CON-6.1: Green Construction
Adopt development standards and guidelines which support "green" construction and environmental leadership in the building industry. This includes use of the Build-It-Green checklist for new construction projects and incentives for LEED (Leadership in Energy and Environmental Design) certification. Building design and site planning should incorporate measures to reduce heating and cooling costs and improve energy efficiency.

Policy CON-6.2: Energy and Water Audits
Promote the use of energy audits and water audits by Albany residents and businesses to identify and eliminate sources of waste, conserve resources, and reduce utility costs. Lead by example by performing such audits on municipal buildings and properties, and undertaking appropriate improvements to address energy and water inefficiencies in City facilities.

Policy CON-6.3: Energy Retrofits
Encourage the retrofitting of residential and commercial buildings to increase energy efficiency and maximize the use of renewable energy.

Policy CON-6.4: Cool Roofs and Pavement
Encourage the design of roofs, pavement, and other exposed surfaces in a manner that mitigates the heat island effects of development and improves energy efficiency.

Policy CON-6.5: Solar Access
Preserve solar access rights in a way that is consistent with state law and supports the use of photovoltaic energy systems.

Policy CON-6.6: Green Businesses
Create green business programs and other incentive and recognition based initiatives which encourage private enterprise to use greener practices in their operations.

Policy CON-6.7: Renewable Energy
Support low cost financing programs which incentivize private investment in energy efficiency and renewable energy systems. This could include measures such as solar energy empowerment districts and alternative financing for solar installations.

Policy CON-6.8: Water Conservation Measures
Conserve water in City facilities and new development by maintaining requirements for bay-friendly landscaping and water-conserving plumbing fixtures, and by continuing to support EBMUD's public information campaigns to reduce water consumption

Policy CON-6.9: Reducing Water Usage
Partner with EBMUD, PG&E, Stopwaste.org and other organizations to achieve water efficiency and reduced usage and support indoor and outdoor conservation practices.

Policy CON-6.10: Reclaimed Water
Support the use of reclaimed water, both on an individual basis (e.g., gray water recycling for private residences) and on a citywide basis for landscaping and irrigation.

IMPLEMENTING ACTIONS

Action CON-6.A: Green Building Code
Require new construction to meet or exceed California Green Building Code standards for energy and water efficiency. Albany's building codes should be regularly reviewed and periodically amended to meet or exceed state requirements.

Action CON-6.B: Zero Emissions Municipal Buildings
Pursue a zero emissions target for City buildings through the development of renewable energy systems, performance data displays, and energy efficiency improvements to public buildings.

Action CON-6.C: Community Choice Aggregation
Continue to explore Community Choice Aggregation, an approach to energy procurement in which the City would partner with other jurisdictions to secure alternative energy supply contracts.

Action CON-6.D: Energy Outreach
Develop outreach programs to increase energy efficiency and renewable energy investments in the city, and partner with other organizations such as PG&E and Stopwaste.org to carry out their energy education and outreach efforts. The City will continue to hold events such as the annual Arts and Green Festival to raise awareness of environmental issues and opportunities for more sustainable living, with an emphasis on attracting new participants.

Action CON-6.E: Point of Sale Energy Requirements
Continue to evaluate point of sale energy efficiency upgrade requirements for homes and businesses. Consider ordinances requiring such upgrades.

Action CON-6.F: Multi-Family Energy Use Monitoring
Continue working with Stopwaste.org to develop and implement a benchmarking pilot program which assists landlords and tenants in gauging utility usage over time. Encourage PG&E, EBMUD, and other utilities to provide comparative conservation metrics on utility bills.

Action CON-6.G: Dark Skies Ordinance
Consider the feasibility of a local "dark skies" ordinance or changes to the exterior lighting provisions in the Municipal Code to limit adverse effects associated with night lighting from urban uses.

The intent of such an Ordinance, if adopted, would be to increase awareness of light pollution issues, ensure compliance with State requirements for night lighting, and reduce energy use. Such an Ordinance would permit reasonable uses of outdoor lighting while minimizing glare and obtrusive lighting, and limiting mis-directed or unnecessary outdoor lighting. Exterior lighting is currently governed by Section 20.036.20(c) of the Municipal Code and by various State building regulations.

Action CON-6.H: Irrigation Efficiency
As funding allows, replace existing City irrigation infrastructure with more efficient infrastructure that reduces losses from evapotranspiration and creates the opportunity for the future application of reclaimed water.

GOAL CON-7: WASTE REDUCTION

Eliminate the landfilled disposal of solid waste.

POLICIES

Policy CON-7.1: Zero Waste
Work toward an ultimate target of "zero waste" by continuing to reduce solid waste generation and expand local recycling and composting programs.

Policy CON-7.2: Expanded Waste Diversion
Work with Stopwaste.org, Alameda County, and other organizations to adopt local ordinances which expand the scope of recycling and waste reduction. A particular emphasis should be placed on increasing the diversion rate for multi-family buildings and commercial businesses and expanding recycling of construction and demolition debris.

Policy CON-7.3: Waste Reduction
Support regional, statewide, and national initiatives to reduce waste through such measures as eliminating junk mail, reducing excessive product packaging, increasing e-waste recycling, promoting the sharing and reuse of consumer goods in lieu of individual consumption, extending producer responsibility, food waste reduction, and expanding the market for recycled goods and products.

Policy CON-7.4: Education and Outreach
Continue education and outreach on the importance and benefits of waste reduction.

Policy CON-7.5: Commercial and Household Hazardous Waste
Continue and expand efforts to reduce, collect, and ensure the proper disposal of household hazardous waste, commercial business waste, electronic waste, bulky goods, and other waste that cannot be easily recycled through conventional pick-up.

IMPLEMENTING ACTIONS

Action CON-7.A: Municipal Waste Reduction
Implement measures to reduce municipal waste and increase the use of recycled products and salvaged materials for City operations. This includes environmentally friendly purchasing practices, installation of recycling receptacles in parks and public spaces, city-sponsored composting programs, staff training, and environmental education initiatives.

Action CON-7.B: Waste Reduction Program
Maintain a solid waste reduction and management program that is coordinated with Stopwaste.org. Components of this program include trash collection, compost and recycling collection, education and outreach, and other components to minimize landfilled waste.

Waste Management educational display