SD City Planning

Conservation Element

Draft 2027 General Plan Amendment

City of San Diego

Fall 2026

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Purpose

To become an international model of sustainable development and conservation.

To provide for the long-term conservation and sustainable management of the rich natural resources that help define the City's identity, contribute to its economy, and improve its quality of life.

Introduction

Conservation is the planned management, preservation, and wise utilization of natural resources and landscapes. The Conservation Element contains policies to guide the conservation of the resources that are fundamental components of San Diego's environment, that help define the City's identity, and that are relied upon for continued economic prosperity. San Diego's resources include, but are not limited to: water, land, air, biodiversity, minerals, natural materials, recyclables, topography, views, and energy. Over the long term, conservation is the most cost-effective strategy to ensure that there will be a reliable supply of the resources that are needed now and in the future.

Sustainable conservation practices help ensure that future generations will be able to use and enjoy these resources to achieve and maintain a healthy and diverse environment and economy. Sustainability is a global issue that extends beyond the realm of City planning. However, local land use planning and resource management affect the economic vitality, natural environment and societal support that contribute to a sustainable San Diego. Sustainable, "clean," or "green" industries include those that are using or developing new technologies or processes to make better use of resources, to reduce pollution, to allow for greater use of renewable resources, or to achieve other environmental benefits.

The City of Villages strategy to direct growth into areas that are served by transit is, in itself, a conservation strategy. Compact, transit-oriented growth is an efficient use of urban land that reduces the need to develop outlying areas and creates an urban form where transit, walking/rolling and bicycling are more realistic alternatives to automobile travel. Reducing dependence on automobiles reduces miles driven, which, in turn, lowers greenhouse gas emissions. Additionally, it improves water quality by decreasing automobile-related oil and gas leaks that pollute water bodies throughout the City.

Climate Change

Climate change is a growing concern for cities around the world. The burning of fossil fuels, such as coal and gasoline, as well as deforestation and other human activities are changing the composition of the atmosphere, causing concentrations of greenhouse gases such as carbon dioxide, nitrous oxide, and methane to increase significantly. In 2022, the Intergovernmental Panel on Climate Change , sounded the alarm on climate change more than ever before and indicate that human activities are estimated to have caused approximately 1.0˚C of global warming above pre-industrial levels, with a likely range of 0.8˚C to 1.2˚C. As higher levels of greenhouse gases are emitted and global temperatures increase, there will be changes in rainfall patterns, snow and ice cover, and sea level. This could have significant impacts on the San Diego region in terms of water and energy availability and coastal flooding. Additionally, as the temperature rises, there are more human health effects from air pollution and heat stress.

State and local governments have taken a leadership role in addressing mitigation and adaptation strategies for a changing climate. Specifically, the California Global Warming Solutions Act of 2006, (Assembly Bill 32), created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the California Air Resources Board to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The 2022 Scoping Plan for Achieving Carbon Neutrality lays out a path to achieve targets for carbon neutrality and reduce GHG emissions by 85 percent below 1990 levels no later than 2045. Assembly Bill 32 also directs the California Air Resources Board to develop regulations and establish a reporting and monitoring system to track global warming emissions levels.

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The City of San Diego has taken steps to address climate change impacts at a local level. In 2002, the City Council adopted the San Diego Sustainable Community Program. This program established the partnership with the Cities for Climate Protection Campaign, which is a program administered by the International Council for Local Environmental Initiatives. To date, more than 2,500 local and regional governments worldwide participate in the campaign, including over 100 cities and counties located in California. The campaign is based on a performance framework structured around five milestones that local governments commit to undertake. Local governments identify the source of greenhouse gas emissions, calculate the volume contributed from energy use, transportation, and waste management, and then develop an action plan to reduce those emissions.

The Climate Action Plan takes bold steps toward a more sustainable place to live, work and play. The Climate Action Plan establishes a community-wide goal of net zero by 2035, committing San Diego to an accelerated trajectory for greenhouse gas reductions. Achieving net-zero emissions will improve the air we breathe, the communities we live in, and our overall quality of life. The Climate Action Plan is one part of the City's comprehensive and coordinated approach to addressing climate change referred to as Our Climate, Our Future. Our Climate, Our Future currently includes Climate Resilient SD, the Municipal Energy Strategy, Building Decarbonization efforts, and climate equity initiatives.

The Climate Action Implementation Plan and Implementation Cost Analysis organizes the City's processes and government structure around the net-zero goal – centering equity, accountability, and transparency. City departments provide annual work plans to show how they will work towards achieving their measures of success for the net-zero goal. Policies that address local GHG mitigation strategies in San Diego are integrated within the General Plan. Together, this collection of policies support and promote the adopted actions outlined in the City's Climate Action Plan. The City continues to investigate additional steps that can be taken to help reduce greenhouse gas emissions, meet adaptation goals, and curb the impact of climate change at the local level.

The Conservation Element reflects key goals contained in many other City and regional plans and programs and will help guide their future updates. Examples of City planning documents and programs that currently address conservation issues are included in Appendix CE-1. The Conservation Element sets forth a citywide vision that ties these various natural resource-based plans and programs together using a village strategy of growth and development. It contains policies for sustainable development, preservation of open space and wildlife, management of resources, and other initiatives to protect the public health, safety and welfare.

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Table CE-1 Issues Related to Climate Change Addressed in the General Plan

Issues	General Plan Policy		
	Element	Section	Policy
City of Villages Strategy	Conservation	A. Climate Change and Sustainable Development	CE-A.2
		B. Open Space and Landform Preservation	CE-B.1 through CE-B.5
	Land Use and Community Planning	A. City of Villages Strategy	LU-A.1 through LU-A.11
		F. Consistency	LU-F.3
		H. Balanced Communities and Equitable Development	LU-H.2; LU-H.6; LU-H.7
		I. Environmental Justice	LU-I.9 through LU-I.11
	Mobility	A. Walkable/rollable Communities	ME-A.1 through ME-A.11
		B. Bicycling	ME-B.2; ME-B.4; ME-B.5
		D. Transit	ME-D.1 through ME-D.19
		E. Complete Streets	ME-E.2
		K. Regional Coordination and Financing	ME-K.2; ME-K.6
	Urban Design	A. General Urban Design	UD-A.1; UD-A.2; UD-A.3; UD-A.9; UD-A.10
		B. Mixed-Use Villages and Commercial Areas	UD-B.1; UD-B.6; UD-B.7; UD-B.9
		C. Distinctive and Inclusive Neighborhoods and Residential Design	UD-C.5d; UD-C.6
Greenhouse Gas (GHG) Emissions and Alternative Modes of Transportation	Conservation	A. Climate Change and Sustainable Development	CE-A.1; CE-A.2; CE-A.13, CE A.14
		F. Air Quality	CE-F.1 through CE-F.8
		J. Urban Forestry	CE-J.4
		N. Environmental Education	CE-N.3; CE-N.5
	Land Use and Community Planning	I. Environmental Justice	LU-I.11
	Mobility	A. Walkable / Rollable Communities	ME-A.8 through ME-A.11
		B. Bicycling	ME-F.5.
		C. Shared Use Mobility	ME-C.1 through ME-C.5
		D. Transit First	ME-D.1; ME-D.9; ME-D.16
		G. Transportation Demand Management	ME-G.1 through ME-G.9

Issues	General Plan Policy		
	Element	Section	Policy
		H. Parking and Curb Space Management	ME-H.5
	Urban Design	A. General Urban Design	UD.A-9; UD.A-10; UD-B.6; UD-B.9
Energy Efficiency	Conservation Element	A. Climate Change and Sustainable Development	CE-A.5; CE-A.6; CE-A.8; CE-A.9; CE-A.11; CE-A.12
		F. Air Quality	CE-F.2; CE-F.3
		I. Sustainable Energy	CE-I.1 through CE-I.13
	Urban Design	A. General Urban Design	UD-A.4; UD.A-5j
Local Food	Conservation	L. Agricultural Resources	CE-L.3, CE-L.5, CE-L.7-L.11
Urban Heat Island Effect	Conservation	A. Climate Change and Sustainable Development	CE-A.2; CE-A.5; CE-A.6; CE-A.11; CE-A.12
		E. Urban Runoff Management	CE-E.2c; CE-E.2e
		J. Urban Forestry	CE-J.1
	Recreation	A. Park and Recreation Guidelines	RE-A-7
	Urban Design	A. General Urban Design	UD-A.8e; UD-A.12
Waste Management and Recycling	Conservation	A. Climate Change and Sustainable Development	CE-A.2; CE-A.8; CE-A.9; CE-A.10
		C. Coastal Resources	CE-C.7
		D. Water Resources Management	CE-D.1; CE-D.3
		E. Urban Runoff Management	CE-E.6
		F. Air Quality	CE-F.3
		N. Environmental Education	CE-N.4; CE-N.5; CE-N.7
	Public Facilities, Services and Safety	F. Wastewater	PF-F.5
		I. Waste Management	PF-I.1 through PF-I.4
Water Management and Supply	Conservation	A. Climate Change and Sustainable Development	CE-A.2
		D. Water Resources Management	CE-D.1; CE-D.2; CE-D.4
		I. Sustainable Energy	CE-I.4; CE-I.6
	Public Facilities, Services and Safety	H. Water Infrastructure	PF-H.1 through PF-H.3

A. Climate Change and Sustainable Development

Goals

- To reduce the City's overall carbon dioxide footprint by improving energy efficiency, increasing use of alternative modes of transportation, employing sustainable planning and design techniques, and providing environmentally sound waste management.
- To be prepared for, adapt, and thrive in a changing climate.
- To become a city that is an international model of sustainable development and conservation.

Discussion

The energy requirement to maintain buildings contributes nearly half of the GHG emissions nationally, and the second highest source is from vehicle emissions. In San Diego, vehicle emissions constitute more than half of the region's GHG emissions and are also responsible for almost 80 percent of the smog-forming emissions (see Table CE-2). While climate change is a global problem, at the local level, it is possible to reduce greenhouse gas emissions by fostering sustainable communities through the implementation of sustainable development policies and practices. Climate change goals can be more effectively met when the principles of sustainability are integrated into land use, transportation, conservation, and economic policies.

The City of Villages strategy focuses the City's growth into compact, mixed-use centers of various scales that are linked to the regional transit system, and preserves open space lands. This strategy creates opportunities for more convenient travel by transit, bicycles and foot, which will help reduce local contributions to greenhouse gas emissions that might otherwise occur by reducing the length and number of auto trips. Since the City of Villages strategy seeks to accommodate most of the City's growth needs through infill and redevelopment, it provides an alternative to lower density, auto-oriented development in the outlying areas of the City and region. Close coordination of land use and transportation planning are fundamental for establishing an urban form that integrates principles of sustainability.

There are also opportunities for new structures to reduce energy consumption by adhering to "sustainable building" practices. Existing structures have opportunities to implement energy efficiencies upgrades, as well. "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."1 The City is implementing sustainable development policies that will reduce its environmental footprint, including: conserving resources, following "sustainable building" practices, reducing greenhouse gas emissions, and encouraging clean technologies. In sustainable development practices, economic growth is closely tied with environmental, "clean," or "green" technologies and industries. Environmental and economic initiatives are planned and managed together, each reinforcing and being an integral component of the other.

San Diego is well positioned to become a leader in clean technology industries due to its highly qualified workforce, world-class universities and research institutions, and established high technology industries (see also Economic Prosperity Element, Section A). "Clean technologies" are processes, products, or services that reduce negative environmental impacts. Clean technologies can accomplish these reductions through increased energy efficiency, the use of sustainable resources and materials, and/or incorporating environmental protection activities. Clean technology encompasses advancements in solar power, wind power, hybrid vehicles, fuel cell technology, tidal and wave power, bioenergy, energy efficient building materials and technologies, and water treatment systems. It often involves substituting biologically-based materials and processes for chemically-based approaches. Clean technology is becoming cost-competitive with its traditional counterparts and offers promising opportunities for new businesses, job creation, and technological innovation in San Diego. Clean technology industries demonstrate that environmental protection and economic

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competitiveness goals are aligned and mutually beneficial.

Buildings account for nearly half of the total energy used in the United States, and represent a significant portion of the nation's consumption of energy and raw materials, and waste output. Sustainable or "green" buildings use resources such as building materials, water, energy, and land more efficiently than other buildings. "Green" buildings provide an array of environmental, economic and health benefits for building owners and occupants, and help the broader community by conserving resources and reducing pollution. The City's Sustainable Building Policy requires City government projects to achieve the U.S. Green Building Council's LEED silver standard for all buildings and major renovations over 5,000 square feet (Council Policy 900-14) and encourages private developers to use sustainable practices through a permit expedite program.

The design of commercial and residential developments is a significant factor in creating what is known as "Urban Heat Island Effect." Heat islands form as cities replace natural land cover with dark-colored impermeable pavement for roads and parking lots; construct buildings that block natural cooling from wind; and otherwise collect and retain heat so much that a city can be up to ten degrees warmer than nearby open spaces. The hotter it is, the more ground level ozone is created and the more energy is required for cooling. Ground level ozone results in public health impacts that seriously affect sensitive members of the population including people with respiratory problems, the elderly and children. Implementation of sustainable development practices and climate adaptation strategies may reduce temperature increases, pollution levels and heat-related illnesses associated Urban Heat Island effects in San Diego. Climate Resilient SD includes many heat mitigation strategies, such as tree plantings, green roofs, community greening, and cool pavement.

Policies

CE-A.1 Influence state and federal efforts to reduce greenhouse gas emissions so that implementation requirements are equitably applied throughout the state, and to address actions that are beyond the jurisdiction of local government.

CE-A.2 Reduce the City's carbon footprint. Develop and adopt new or amended regulations, programs, and incentives as appropriate to implement the goals and policies set forth in the General Plan to:

- Create sustainable and efficient land use patterns to reduce vehicular trips and preserve open space;
- Reduce fuel emission levels by encouraging alternative modes of transportation and increasing fuel efficiency;
- Improve energy efficiency, especially in the transportation sector and buildings and appliances;
- Reduce the Urban Heat Island effect through sustainable design and building practices and climate adaptation strategies
- Reduce waste by improving waste management and recycling programs;
- Plan for water supply and emergency reserves.

CE-A.3 Collaborate with climate science experts on local climate change impacts, mitigation, and adaptation, including sea level changes, to inform public policy decisions.

CE-A.4 Pursue the development of "clean" or "green" sector industries that benefit San Diego's environment and economy.

CE-A.5 Employ sustainable or "green" building techniques for the construction and operation of buildings.

a. Develop and implement sustainable building standards for new and significant remodels of residential and commercial buildings to maximize energy efficiency, and to achieve overall net zero energy consumption for new residential buildings and new commercial buildings consistent with the Climate Action Plan. This can be accomplished through factors including, but not limited to:

- Designing mechanical and electrical systems that achieve greater energy

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efficiency with currently available technology;
- Minimizing energy use through innovative site design and building orientation that addresses factors such as sun-shade patterns, prevailing winds, landscape, and sun-screens;
- Employing self-generation of energy using renewable technologies;
- Combining energy efficient measures that have longer payback periods with measures that have shorter payback periods;
- Reducing levels of non-essential lighting, heating and cooling; and
- Using energy efficient appliances and lighting.

b. Provide technical services for "green" buildings in partnership with other agencies and organizations.

CE-A.6 Design new and major remodels to City buildings, and where feasible, long term building leases for City facilities, to achieve at a minimum, the Silver Rating goal identified by the Leadership in Energy and Environmental Design (LEEDTM) Green Building Rating System to conserve resources, including but not limited to energy and renewable resources.
- Develop a municipal energy implementation plan and zero carbon emissions buildings and operations policies.

CE-A.7 Construct and operate buildings using materials, methods, and mechanical and electrical systems that ensure a healthful indoor air quality. Avoid contamination by carcinogens, volatile organic compounds, fungi, molds, bacteria, and other known toxins.

a. Eliminate the use of chlorofluorocarbon-based refrigerants in newly constructed facilities and major building renovations and retrofits for all heating, ventilation, air conditioning, and refrigerant-based building systems.

b. Reduce the quantity of indoor air contaminants that are odorous or potentially irritating to protect installers and occupants' health and comfort. Where feasible, select low-emitting adhesives, paints, coatings, carpet systems, composite wood, agri-fiber products, and others.

CE-A.8 Reduce construction and demolition waste in accordance with Public Facilities Element, Policy PF-I.2, or by renovating or adding on to existing buildings, rather than constructing new buildings.

CE-A.9 Reuse building materials, use materials that have recycled content, or use materials that are derived from sustainable or rapidly renewable sources to the extent possible, through factors including:
- Scheduling time for deconstruction and recycling activities to take place during project demolition and construction phases;
- Using life cycle costing in decision-making for materials and construction techniques. Life cycle costing analyzes the costs and benefits over the life of a particular product, technology, or system;
- Removing code obstacles to using recycled materials in buildings and for construction; and
- Implementing effective economic incentives to recycle construction and demolition debris (see also Public Facilities Element, Policy PFI.2).

CE-A.10 Include features in buildings to facilitate recycling of waste generated by building occupants and associated refuse storage areas.

a. Provide permanent, adequate, and convenient space for individual building occupants to collect refuse and recyclable material.

b. Provide a recyclables collection area that serves the entire building or project. The space should allow for the separation, collection and storage of paper, glass,

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plastic, metals, yard waste and other materials as needed.

CE-A.11 Implement sustainable landscape design and maintenance.

a. Use integrated pest management techniques, where feasible, to delay, reduce, or eliminate dependence on the use of pesticides, herbicides, and synthetic fertilizers.
b. Encourage composting efforts through education, incentives, and other activities.
c. Decrease the amount of impervious surfaces in developments, especially where public places, plazas and amenities are proposed to serve as recreation opportunities. Prioritize implementation in areas with the greatest needs (see also Recreation Element, Policy RE-A.6 and A.7).
d. Strategically plant deciduous shade trees, evergreen trees, and drought tolerant native plants, as appropriate, to contribute to sustainable development goals. Prioritize implementation in areas with the greatest needs.
e. Support the creation of new urban green space along freeways and city rights-of-way.
f. Reduce use of lawn types that require high levels of irrigation.
g. Strive to incorporate existing mature trees and native plants into site designs.
h. Develop policies that encourage and incentivize developers, homeowner associations, and other organizations to preserve, maintain and plant trees.
i. Minimize the use of landscape equipment powered by fossil fuels.
j. Implement water conservation measures in site/building design and landscaping.
k. Encourage the use of high efficiency irrigation technology, and recycled site water to reduce the use of potable water for irrigation. Use recycled water to meet the needs of development projects to the maximum extent feasible. (see Policy CE-A.12).

CE-A.12 Reduce the Urban Heat Island effect, through actions such as:

- Using cool roofing materials, such as reflective, low heat retention tiles, membranes and coatings, or vegetated eco-roofs to reduce heat build-up;
- Planting trees and other plants, to provide shade and cool air temperatures. In particular, properly position trees to shade buildings, air conditioning units, and parking lots;
- Identifying City lands and spaces that need trees and identify ways to increase permeable areas for new trees. Prioritize implementation in areas with the greatest needs;
- Incorporating considerations for a changing climate into urban forestry management and planning; and
- Reducing heat retention in parking lots through increased shading or use of cool paving materials as feasible (see also Urban Design Element, Policy UD-A.12).

CE-A.13 Plant trees (consistent with habitat and water conservation policies) for their many environmental benefits, including natural carbon sequestration.

a. Encourage the use of native plant species.
b. Avoid trees and plant species that are on the California Invasive Plant Council watch list.

CE-A.14 Regularly monitor, update and implement the City's plans addressing climate change mitigation and resilience ~~Climate Action Plan and Climate Resilient SD~~ to ensure, at a minimum compliance with all applicable federal, state and local laws.

a. Inventory greenhouse gas emissions, including emissions for the City community-at-large, and for the City as an organization.
b. Identify actions and programs designed to reduce the climate change impacts caused by the community-at-large and the City as an organization.

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CE-A.15 Support expansion of urban and local agriculture to realize environmental, economic, and public health benefits including: increasing access to fresh local food; reducing energy used for food transportation and distribution; and increasing opportunities for economic development and local enterprise (see also Conservation Element, Section L, and Recreation Element, Sections A and E).

CE-A.16 Prioritize nature-based solutions and other sustainable management practices to provide environmental, social and economic benefits and help build climate resilience.

CE-A.17 Develop sustainability measures to advance all-electric and zero-emissions infrastructure for new construction and existing buildings, and address barriers to building electrification and decarbonization through programs and incentives, particularly for low-income households, consistent with ~~the Climate Action Plan~~ the City's plans addressing climate change mitigation and resilience.

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B. Open Space and Landform Preservation

Goals

- Preservation and long-term management of the natural landforms and open spaces that help make San Diego unique.

Discussion

Open space may be defined as land or water areas that are undeveloped, generally free from development or developed with low-intensity uses that respect natural environmental characteristics and are compatible with open space use. Open space may have utility for: primarily passive park and recreation; conservation of land, water, or other natural biological resources; historic or scenic purposes; visual relief; or landform preservation. San Diego's many canyons, valleys, mesas, hillsides, beaches, and other landforms create a unique setting that fosters biodiversity, a sense of place, and recreational opportunities. Designated parks and open spaces are shown on the General Plan Land Use and Street System Map (see also Land Use Element, Figure LU-2). San Diego has a long history of planning for open space preservation and protection, including:

- 1868 – The City Board of Trustees set land aside for a City park, later named Balboa Park.
- 1908 – John Nolen's comprehensive plan for San Diego called for development to conform to and respect the natural environment.
- 1972 – The City amended the City Charter Section 103.1a to establish the Environmental Growth Fund, two-thirds of which is to be used to pay principle and interest on bonds issued for the acquisition of open space lands, with the remainder to be used to preserve and enhance the environment of the City.
- 1978 – San Diego voters approved Proposition C which authorized the sale of bonds to purchase open space.
- 1979 – The Progress Guide and General Plan, Open Space Element called for providing an open space system.
- 1987 – The City's Residential Growth Management Program included a policy recommendation to allow topography and environmentally sensitive lands to define the City's urban form.
- 1997 – The Multiple Species Conservation Program (MSCP) was adopted to preserve and manage sensitive plants and animals at the ecosystem level through habitat protection.
- 2017 – The Vernal Pool Habitat Conservation Plan (VPHCP) was adopted to provide comprehensive preservation and management of vernal pools and seven state and federal threatened and endangered vernal pool plants and animals.

The City's Environmentally Sensitive Lands (ESL) regulations help protect, preserve, and restore lands containing steep hillsides, sensitive biological resources, coastal beaches, sensitive coastal bluffs, or Special Flood Hazard Areas. The intent of the ESL regulations is to assure that development occurs in a manner that protects the overall quality of the resources, encourages a sensitive form of development, retains biodiversity and interconnected habitats, maximizes physical and visual public access to and along the shoreline, and reduces hazards due to flooding in specific areas while minimizing the need for construction of flood control facilities. Steep hillsides are shown on Figure CE-1, Steep Slopes and 200 Foot Contours.

The development regulations and guidelines for environmentally sensitive lands also serve to implement the MSCP and VPHCP by placing priority on the preservation of biological resources within the Multi-Habitat Planning Area (MHPA) (see Figure CE-2, Multi-Habitat Planning Area). The goal of the MSCP and VPHCP is to achieve a sustainable balance between plants and animal preservation and smart growth by identifying areas for preservation (within the MHPA) and areas for development (outside the MHPA), as further discussed in Section G and H.

The City's parks, open space, trails and pedestrian linkages are part of an integrated system that connect with regional and state resources and

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provide opportunities for community members and visitors to experience San Diego's open spaces. The Recreation Element describes the attributes of designated and dedicated park and open space lands for the provision of outdoor recreation. Some important open space areas are not preserved as dedicated park land but are protected through regulations or other private property restrictions such as conservation or open space easements.

Open space that is designated in community plans and other land use plans is an important component of the open space system because of its value in protecting natural landforms, defining community boundaries, providing natural linkages between communities, providing visually appealing open spaces, and protecting habitat and biological systems of community importance that are not otherwise included in the MHPA.

Policies

CE-B.1 Protect and conserve the landforms, canyon lands, and open spaces that: define the City's urban form; provide public views/vistas; serve as core biological areas and wildlife linkages; are wetlands habitats; provide buffers within and between communities; or provide outdoor recreational opportunities.

a. Utilize Environmental Growth Funds and pursue additional funding for the acquisition and management of MHPA and other important community open space lands, and implementation of the VPHCP.
b. Support the preservation of rural lands and open spaces throughout the region.
c. Protect, restore and enhance urban canyons and other important community open spaces including those that have been designated in community plans for the many benefits they offer locally, and regionally, including environmental education and recreation opportunities, as part of a collective citywide open space system (see also Recreation Element, Sections C and F; Urban Design Element, Section A).
d. Minimize or avoid impacts to canyons and other environmentally sensitive lands, by relocating sewer infrastructure out of these areas where possible, minimizing construction of new sewer access roads into these areas, and redirecting of sewage discharge away from canyons and other environmentally sensitive lands.
e. Encourage the removal of invasive plants and the planting of native plants near open space preserves.
f. Pursue formal dedication of existing and future open space areas throughout the City, especially in core biological resource areas of the City's adopted MSCP Subarea Plan and VPHCP.
g. Protect, restore and preserve wetland and upland areas on City managed lands, prioritizing areas with the greatest needs.
h. Prepare and update Natural Resource Management Plans on all managed preserved lands and include in plans considering shifting habitat or conditions due to climate change as well as sequestration potential, as the information becomes available.
i. Require sensitive design, construction, relocation, and maintenance of trails to optimize public access and resource conservation.

CE-B.2 Apply the appropriate zoning and Environmentally Sensitive Lands (ESL) regulations to limit development of floodplains, sensitive biological areas including wetlands, steep hillsides, canyons, and coastal lands.

a. Manage watersheds and regulate floodplains to reduce disruption of natural systems, including the flow of sand to the beaches. Where possible and practical, restore water filtration, flood and erosion control, biodiversity and sand replenishment benefits.
b. Limit grading and alterations of steep hillsides, cliffs and shoreline to prevent increased erosion and landform impacts.

CE-B.3 Use natural landforms and features as integrating elements in project design to

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complement and accentuate the City's form (see also Urban Design Element, Section A).

CE-B.4 Limit and control runoff, sedimentation, and erosion both during and after construction activity.

CE-B.5 Maximize the incorporation of trails and greenways linking local and regional open space and recreation areas into the planning and development review processes.

CE-B.6 Provide an appropriate defensible space between open space and urban areas through the management of brush, the use of transitional landscaping, and the design of structures (see also Urban Design Element, Policy UD-A.3.o). Continue to implement a citywide brush management system.

CE-B.7 Prioritize climate resilience and mitigation of climate change hazard impacts on open space and environmental assets to safeguard against habitat loss, protect city services and promote human health and social equity, consistent with policies in the Safety Element and Climate Resilient SD.

CE-B.8 Ensure the provision of open space that meet the diverse social, economic, and racial equity needs of all residents, as outlined in both the Environmental Justice Element and Parks Master Plan.

CE-B.9 Provide opportunities to preserve, enhance, and expand the open space network to support uses such as habitat, recreation, natural resources, historic and tribal resources, water management, and aesthetics, consistent with Biodiverse SD and Climate Resilient SD.

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Figure CE-1 Steep Slopes and 200 Ft. Contours

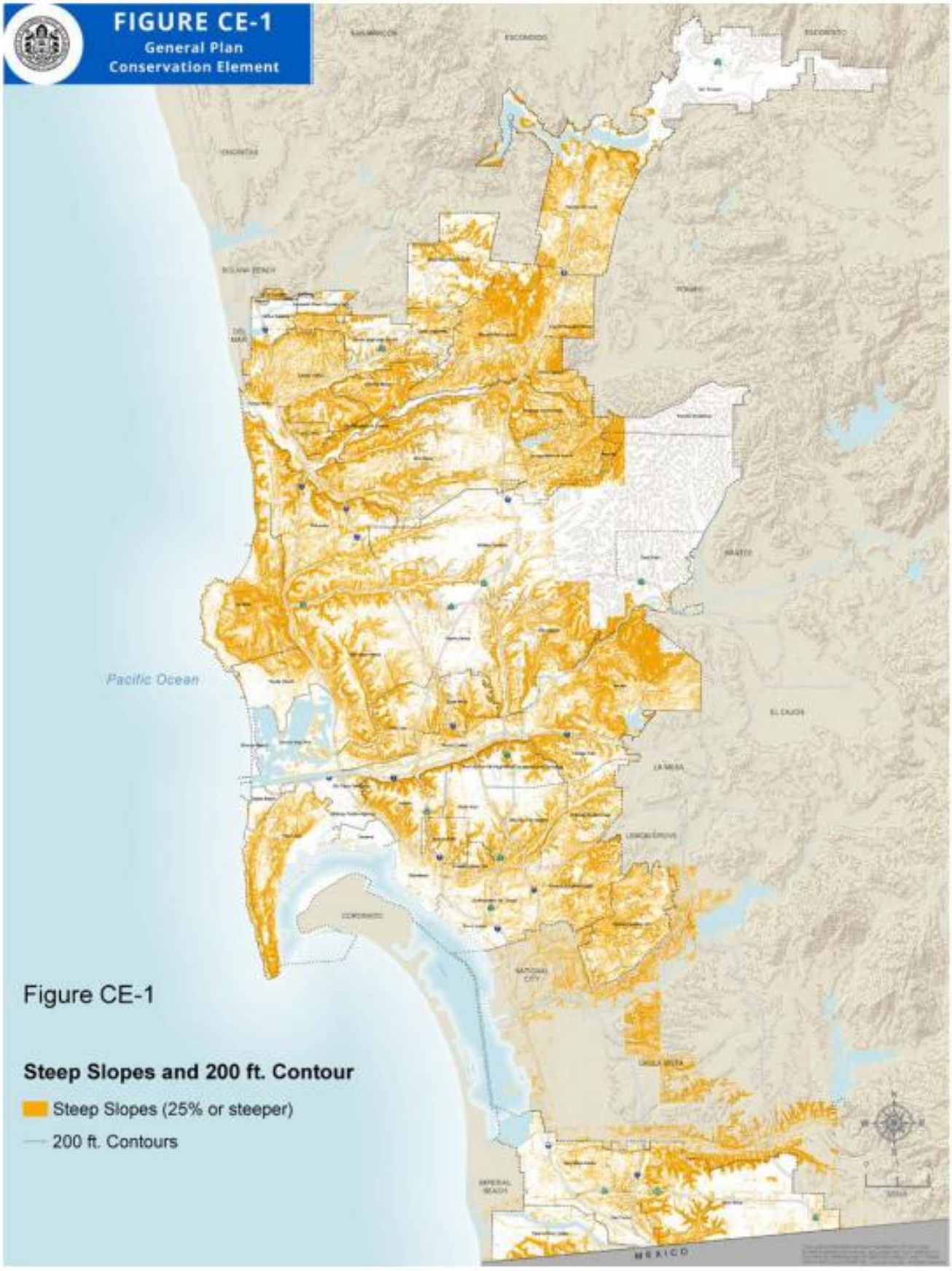
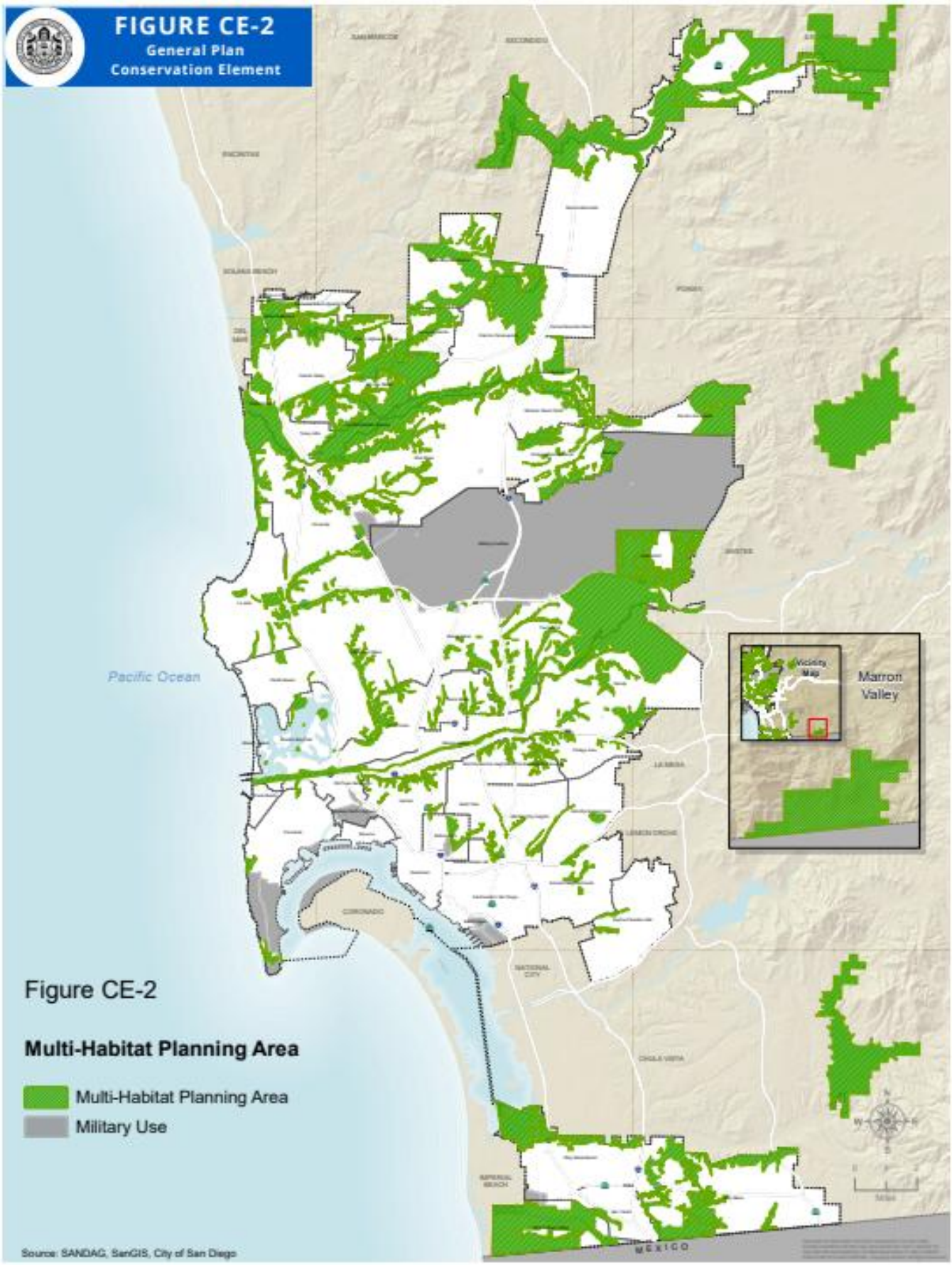


Figure CE-2 Multi-Habitat Planning Area



C. Coastal Resources

Goals

- Coastal resource preservation and enhancement.
- Clean coastal waters by continuing to improve the quality of ocean outfall discharges.
- Enhanced public access to the shoreline and coast.

Discussion

San Diego's environment, its coastal location, temperate climate, and diverse topography, contribute to the City's natural beauty and resources. Many of San Diego's most appreciated natural resources are located within the coastal zone. These include the City's beaches, bays, shoreline, coastal canyons and the many rivers, streams and other watercourses that drain inland areas, eventually reaching the coastal environment and waters. In the City, the Coastal Zone encompasses approximately 40,000 acres of public and private land and waters.

Development in the coastal zone in California is governed by the California Coastal Act of 1976. The Act arose out of Proposition 20, the California Coastal Conservation Initiative and responds to the public concern for protecting and enhancing coastal resources. The California Coastal Commission (CCC) is the regulatory agency established to implement the provisions of the Coastal Act. The Coastal Act directs local governments to prepare Local Coastal Programs (LCPs) in accordance with the Act's policies. These policies are designed to guide development in the coastal areas, beach and lagoon resource management, public access, low-cost visitor-serving recreational uses and conservation of the unique qualities and nature of the coast (see also Land Use Element, Section E, for information on how the City prepares and implements LCPs).

Increasing global temperatures are accelerating rates of sea level rise, contributing to coastal flooding and erosion. In the 20th century, sea levels rose 0.71 feet in San Diego. By 2100, sea levels in San Diego may rise between 3.6 to 10.2 feet (California Coastal Commission, 2018). This range of sea level projections demonstrates the increasing uncertainty associated with estimating sea level rise in the long term, especially after 2050. Coastal storms are also projected to occur more frequently in the future, further exacerbating flooding and erosion along the coast.

San Diego offers many coastal resources that contribute to the local economy and provide opportunities for tourism, recreation, and marine-related industry. Some of the most prominent coastal uses in San Diego include:

- San Diego Bay: As one of the largest natural harbors in California, it is the home of the Navy (Eleventh Naval District) and provides facilities for commercial and sports fishing, recreational activities, oceanic research, shipbuilding/repair, and wildlife habitat. Most of the San Diego Bay is under the jurisdiction of the Unified Port District.
- Pacific Ocean Offshore Area: The City's jurisdiction extends from the tip of Point Loma northerly to the northern boundary near Sorrento Valley, and three nautical miles seaward from the mean low tide line. This area offers commercial kelp harvesting, commercial fishing, recreational boating, oceanographic research activities, and a marine life refuge (La Jolla Underwater park) and ecological reserve (San Diego Underwater Ecological Reserve)
- Mission Bay: Originally a marshy lagoon draining the San Diego River and various canyon creeks, Mission Bay has been dredged and developed into a resource-based park to accommodate aquatic recreation: water skiing, swimming, boating, small boat harboring, and tourist-based leaseholds.
- Coastal Lagoons: Los Peñasquitos Lagoon, San Diego National Wildlife Refuge, Salt Ponds, wetlands in Mission Bay Park and the Tijuana Slough are a few of San Diego's remaining coastal wetlands/lagoons that provide critical plants, wildlife and marine life habitats both locally, and as part of the Pacific Migratory Flyway.
- Fishing: Many commercial and sport-fishing boats operate out of San Diego Harbor and

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Mission Bay. These bring in fish and shellfish both from the coastal Offshore Area and from more distant areas. For various reasons, the local fishing industry has been declining for the past 25 years, as it has elsewhere in the state.

Policies

CE-C.1 Protect, preserve, restore and enhance important coastal wetlands and habitat (tide pools, lagoons and marine canyons) for conservation, research and limited recreational purposes.

CE-C.2 Control sedimentation entering coastal lagoons and waters from upstream urbanization using a watershed management approach that is integrated into local community and land use plans (see also Land Use Element, Policy LU-E-1).

CE-C.3 Minimize alterations of cliffs and shorelines to limit downstream erosion and to ensure that sand flow naturally replenishes beaches.

CE-C.4 Manage wetland areas as described in Section H, Wetlands, for natural flood control, climate resilience benefits, and preservation of landforms.

CE-C.5 Limit the use of beaches and shorelines to appropriate coastal dependent and ocean-oriented recreational/educational uses as identified in local coastal/community plans.

CE-C.6 Implement watershed management practices designed to reduce runoff and improve the quality of runoff discharged into coastal waters.

CE-C.7 Encourage conservation measures and water recycling programs that eliminate or discourage wasteful uses of water.

CE-C.8 Protect coastal vistas and overlook areas from obstructions and visual clutter where it would negatively affect the public's reasonable use and enjoyment of the resource.

CE-C.9 Develop an integrated system of pedestrian, bicycle, local transit and automobile access to the shoreline that will connect major coastal activity areas with a focus on the ocean and natural scenic corridors.

CE-C.10 Work with local fishing and other coastal-related industry representatives to enhance their possibilities of economic survival in San Diego.

CE-C.11 Integrate the many coastal resources and recreational opportunities into the City's proposed Parks Master Plan (see also Recreation Element, Policy RE-A.1).

CE-C.12 Ensure that all City beaches and shorelines are accessible and available for appropriate public use for all users.

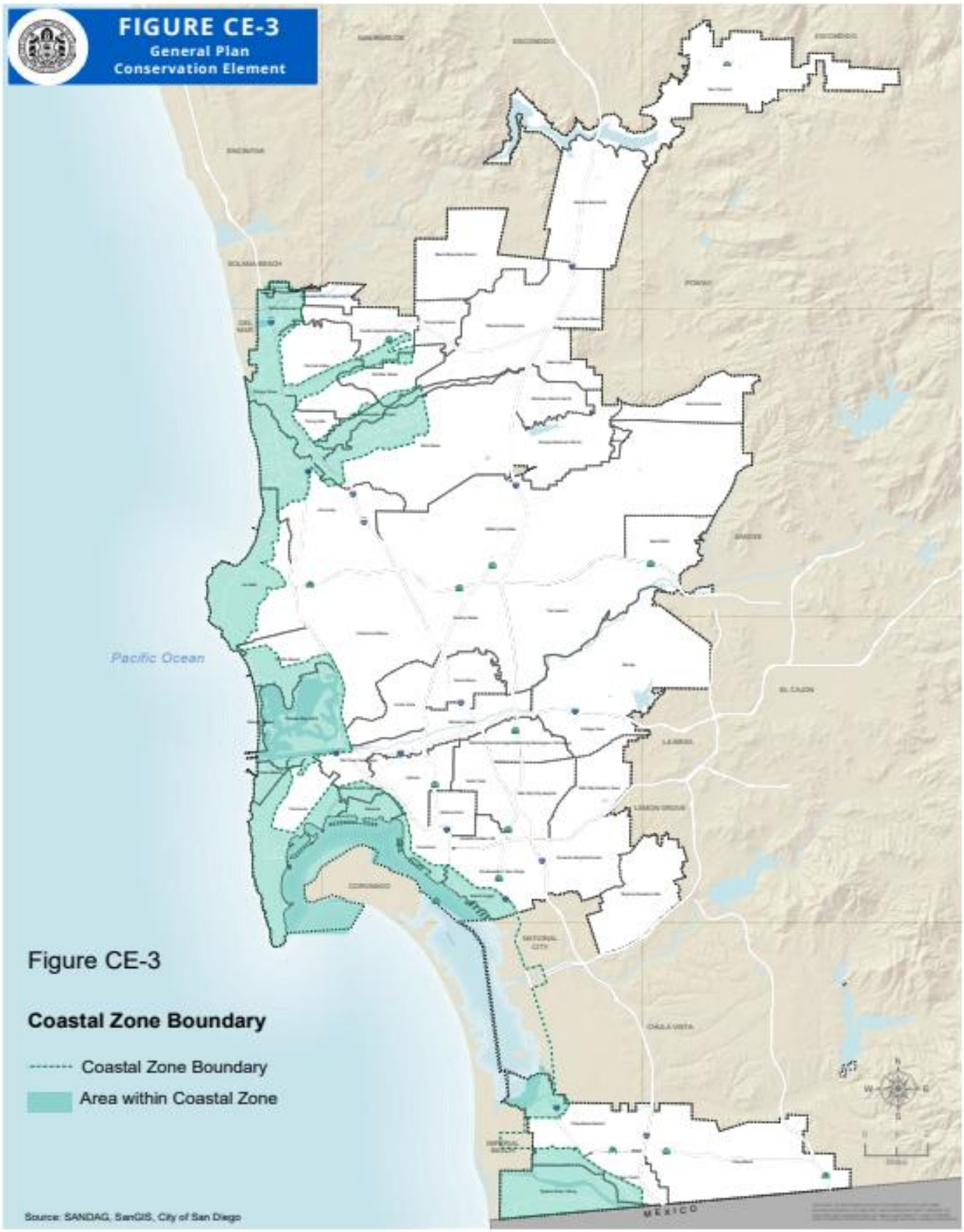
CE-C.13 Acquire remaining beach and shoreline areas for public use.

CE-C.14 Implement nature-based shoreline protection methods to protect areas subject to coastal flooding and erosion.

CE-C.15 Utilize adaptative pathways for coastline planning.

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Figure CE-3 Coastal Zone Boundary



D. Water Resources Management

Goals

- Effective long-term management of water resources so that demand is in balance with efficient, sustainable supplies.
- A safe and adequate water supply that effectively meets the demand for the existing and future population through water efficiency and reclamation programs.

Discussion

San Diego has a semi-arid coastal climate with coastal areas receiving an average of ten inches of rain annually. The City's historically reliable water supply is credited to its ability to import and store water supplies from the Colorado River and Northern California. However, these imported water supplies are limited, and to meet the needs of population increases, economic growth, and competing regional demands, San Diego must develop additional water resources to ensure an adequate supply for present and future generations.

The City has no direct control over the imported water supply, but is a member agency of the San Diego County Water Authority (SDCWA), which is responsible for securing the region's imported water supply. Additional dedicated water supplies and increased water-use efficiency programs are needed for the region to support growth projections and industry needs. In response to imported water supply uncertainties, the City prepared a Long-Range Water Resources Plan, which defines a flexible 30-year strategy and includes evaluation tools for continued water resources planning. The City is leading a phased, multi-year program that will provide nearly half of San Diego's water supply locally by the end of 2035, through the Pure Water San Diego program. The Pure Water San Diego Program will use proven water purification technology to clean recycled water to produce safe, high-quality drinking water. Pure Water San Diego offers a cost-effective investment for San Diego's water needs and will provide a reliable, sustainable water supply.

The City operates local drinking water supply reservoirs that are critical components of the regional water supply system (see also Public Facilities Element, Section H). Rainfall in reservoir areas averages 15-25 inches per year. These reservoirs store imported water, provide emergency water storage, and capture rainfall and runoff that provides ten to twenty percent of the City's water supply. Water quality is threatened by the continued urbanization of watershed lands. Runoff from storms or other human activities picks up pollutants that enter the reservoirs. Watershed planning is an interdisciplinary approach that provides an opportunity to understand the relationship between land use, biology, engineering, geology, and other disciplines on a landscape level using water as the interconnecting element. It should be used to identify major water resource management issues for each area of the City and refine land use policies at the community plan level.

Pollutants of concern for drinking water include materials that are not typically addressed under storm water regulations; nutrients and related algae, organic carbon, and dissolved solids are of particular concern. To fill this gap, the City has written Source Water Protection Guidelines for New Development which help development project proponents and reviewers determine if their projects pose a threat to drinking water quality. Where a threat exists, the guidelines offer suggestions on site designs and the use of Best Management Practices (BMPs) to minimize potential problems. Applying the guidelines and reducing runoff pollution is particularly challenging, as the reservoirs and their tributary watersheds are located almost entirely outside of the City.

Policies

CE-D.1 Implement a balanced, water conservation strategy as an effective way to manage demand by: reducing dependence on imported water supplies; maximizing the efficiency of existing urban water and agricultural supplies through conservation measures/programs; and developing alternative, reliable sources to sustain present and future water needs.

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a. Integrate watershed planning with water supply and land use studies to achieve an integrated approach to ensure that the City can provide adequate water supplies for present uses, accommodate future growth, attract and support commercial and industrial development, and supply local agriculture (see also Public Facilities Element, Policy PF-H.1).
b. Manage groundwater and surface water resources and capacity through an integrated approach to meet overall water supply and resource management objectives (see also Public Facilities Element, Policy PF-H.1).
c. Participate in advanced water treatment processes such as brackish groundwater and seawater desalination programs.
d. Emphasize and refine recycled water programs to help meet non-potable irrigation demands.
e. Develop and expand water-efficient landscaping to include urban forestry, urban plants, and demonstration projects.
f. Support regional efforts towards ensuring that imported water is reliable, cost-effective, and is of high quality.
g. Maintain existing and future water supply, storage, treatment and distribution facilities with minimal or no impact to the environment.
h. Implement conservation incentive programs that increase water-use efficiency and reduce urban runoff.
i. Develop a response plan to assist community members in reducing water use during periods of water shortages and emergencies.
j. Encourage local water agencies to use state-mandated powers to enforce conservation measures that eliminate or penalize wasteful uses of water.
k. Explore alternative conservation measures and technology as they become available.
l. Review/update the City's landscaping regulations as needed to ensure they effectively address the efficient use of water in landscaping.
m. Educate the public on wise water use.
n. Diversify the City's water supply sources and reduce dependence on imported water.

CE-D.2 Protect drinking water resources by implementing guidelines for future development that may affect water supply watersheds, reservoirs and groundwater aquifers. The guidelines should address site design, Best Management Practices (BMPs) and storm water treatment measures.
a. Collaborate with other jurisdictions to reduce the potential for polluted runoff to water supply reservoirs.
b. Enter into cooperative, voluntary agreements with other jurisdictions to enable the City to provide advisory review of development projects outside of the City's boundaries that may impact watersheds and reservoirs.

CE-D.3 Continue to participate in the development and implementation of watershed management plans.
a. Control water discharge in a manner that does not reduce reasonable use by others, damage important native habitats and historic resources, or create hazardous conditions (e.g., erosion, sedimentation, flooding and subsidence).
b. Protect reservoir capacity from sedimentation.
c. Improve and maintain drinking water quality and urban runoff water quality through implementation of Source Water Protection Guidelines for New Development.
d. Improve and maintain urban runoff water quality through implementation of storm water protection measures (see also Urban Runoff Management, Section E).
e. Encourage proper sustainable agricultural practices (if applicable) such as tillage, use of grass filter strips, runoff detention basins, and organic farming.

CE-D.4 Coordinate local land use planning with state and regional water resource

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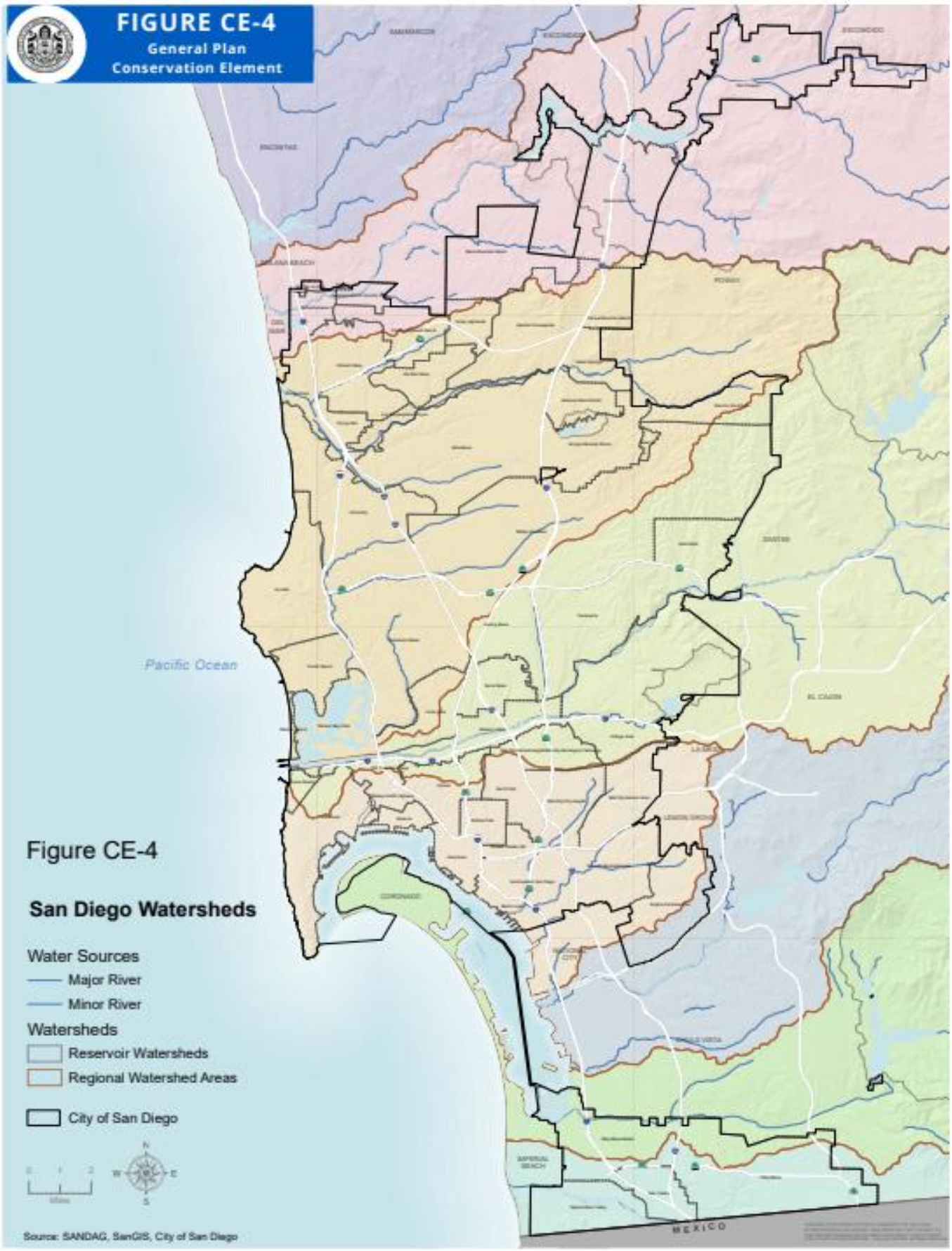
planning to help ensure that the community members of San Diego have a safe and adequate water supply that meets existing needs and accommodates future needs (see also Public Facilities Element, Section H).

a. Consider and evaluate water transfers and other cost-effective ways to increase reliable supplies with minimal environmental effects, where it benefits the City, to help achieve a balanced and integrated water conservation strategy.

CE-D.5 Integrate water and land use planning into local decision-making, including using water supply and land use studies in the development review process.

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Figure CE-4 San Diego Watersheds



E. Urban Runoff Management

Goals

- Protection and restoration of water bodies, including reservoirs, coastal waters, creeks, bays, and wetlands.
- Preservation of natural attributes of both the floodplain and floodway without endangering life and property.

Discussion

When water runoff from rainfall or human activities flows across impervious urban areas it picks up a host of pollutants in its path, such as: trash, debris, organic waste, pesticides, bacteria, viruses, oil, grease, sediments, nutrients, metals, and toxic chemicals. This runoff is a major source of water pollution as it enters storm drain systems, untreated, and is directed to our creeks, bays, wetlands, beaches, and open spaces. The diverse origins and types of runoff pollution make it very difficult to treat, so pollution prevention is the key to a successful urban runoff program. There are five major river systems within or partially within the City: San Dieguito; San Diego; Sweetwater; Otay; and Tijuana Rivers. Due mainly to the dry climate and local impounding reservoirs, most of these are normally dry except during periods of abnormally heavy rainfall. In addition to these rivers, there are also numerous canyons and creeks which drain uplands areas, ultimately reaching the ocean.

Watersheds are areas in which water, sediment, and dissolved materials flow to a common outlet. What happens in one part of the watershed can affect the quality and quantity of water supply. Open space areas and permeable surfaces are important to ensuring water quality. When storm water (or other urban water runoff) passes over these areas and surfaces, some of it is absorbed into the ground and cleansed by natural filtration processes. Maintaining water quality is important to public health, wildlife, and economic prosperity, and is a requirement of the federal Clean Water Act. As runoff increases in developed areas, water quality preservation and runoff management requires protection of key open space areas and permeable surfaces within watersheds (see Figure CE-4, San Diego County Watersheds).

The City's storm water pollution prevention efforts include watershed management, Best Management Practices (BMP) development/ implementation, planning and development measures, public education, employee training, water quality monitoring, source identification, and code enforcement components. Storm Water BMPs are specific management practices designed to prevent pollutants from entering storm water and urban runoff. These efforts are documented in the City's annual Jurisdictional Runoff Management Plan (JRMP). This plan is a requirement of the City's municipal storm water National Pollutant Discharge Elimination System (NPDES) Permit. The permit is issued by the Regional Water Quality Control Board, San Diego Region, in response to the Clean Water Act.

In addition to the water quality impacts from storm water runoff, heavy storms periodically cause flooding damage. San Diego's semiarid climate makes it more susceptible to flooding because of local soil and vegetation characteristics. While the City's numerous canyons and valleys comprise an efficient natural drainage system that results in a low ratio of floodplain area to total land area, there are areas that experience flooding during heavy rains, such as in the case of the San Diego River Valley. Figure CE-5, the Flood Hazard Areas map, depicts the 100-year floodplains, which are areas subject to major flooding. Flood control has been addressed in the City both through engineered flood control channels as well as floodplain and open space zones that significantly restricts development and protects the public from flood hazards.

The following policies address land development practices for erosion control, decreased use of impervious surfaces, and design that captures or reduces runoff from development sites. The policies also provide a summary of the City's overall water quality protection policies.

Policies

CE-E.1 Continue to develop and implement public education programs.

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a. Involve the public in addressing runoff problems associated with development and raising awareness of how an individual's activities contribute to runoff pollution.
b. Work with local businesses and developers to provide information and incentives for the implementation of Best Management Practices for pollution prevention and control.
c. Implement watershed awareness and water quality educational programs for City staff, community planning groups, the general public, and other appropriate groups.

CE-E.2 Apply water quality protection measures to land development projects early in the process-during project design, permitting, construction, and operations-in order to minimize the quantity of runoff generated on-site, the disruption of natural water flows and the contamination of storm water runoff.

a. Increase on-site infiltration, and preserve, restore or incorporate natural drainage systems into site design.
b. Direct concentrated drainage flows away from the MHPA and open space areas. If not possible, drainage should be directed into sedimentation basins, grassy swales or mechanical trapping devices prior to draining into the MHPA or open space areas.
c. Reduce the amount of impervious surfaces through selection of materials, site planning, and street design where possible.
d. Increase permeable areas for new trees and restore spaces that have been paved, focused in areas with the greatest needs.
e. Increase the use of plants in drainage design.
f. Maintain landscape design standards that minimize the use of pesticides and herbicides.
g. Avoid development of areas particularly susceptible to erosion and sediment loss (e.g., steep slopes) and, where impacts are unavoidable, enforce regulations that minimize their impacts.
h. Apply land use, site development, and zoning regulations that limit impacts on, and protect the natural integrity of topography, drainage systems, and water bodies.
i. Enforce maintenance requirements in development permit conditions.
j. Increase the use of green infrastructure, both at watershed scale and site-specific locations.

CE-E.3 Require contractors to comply with accepted storm water pollution prevention planning practices for all projects.

a. Minimize the amount of graded land surface exposed to erosion and enforce erosion control ordinances.
b. Continue routine inspection practices to check for proper erosion control methods and housekeeping practices during construction.

CE-E.4 Continue to participate in the development and implementation of Water Quality Improvement Plans for water quality and habitat protection.

CE-E.5 Assure that City departments continue to use "Best Practice" procedures so that water quality objectives are routinely implemented.

a. Incorporate water quality objectives into existing regular safety inspections.
b. Follow Best Management Practices and hold training sessions to ensure that employees are familiar with those practices.
c. Educate City employees on sources and impacts of pollutants on urban runoff and actions that can be taken to reduce these sources.
d. Ensure that contractors used by the City are aware of and implement urban runoff control programs.
e. Serve as an example to the community-at-large.

CE-E.6 Continue to encourage "Pollution Control" measures to promote the proper collection and disposal of pollutants at

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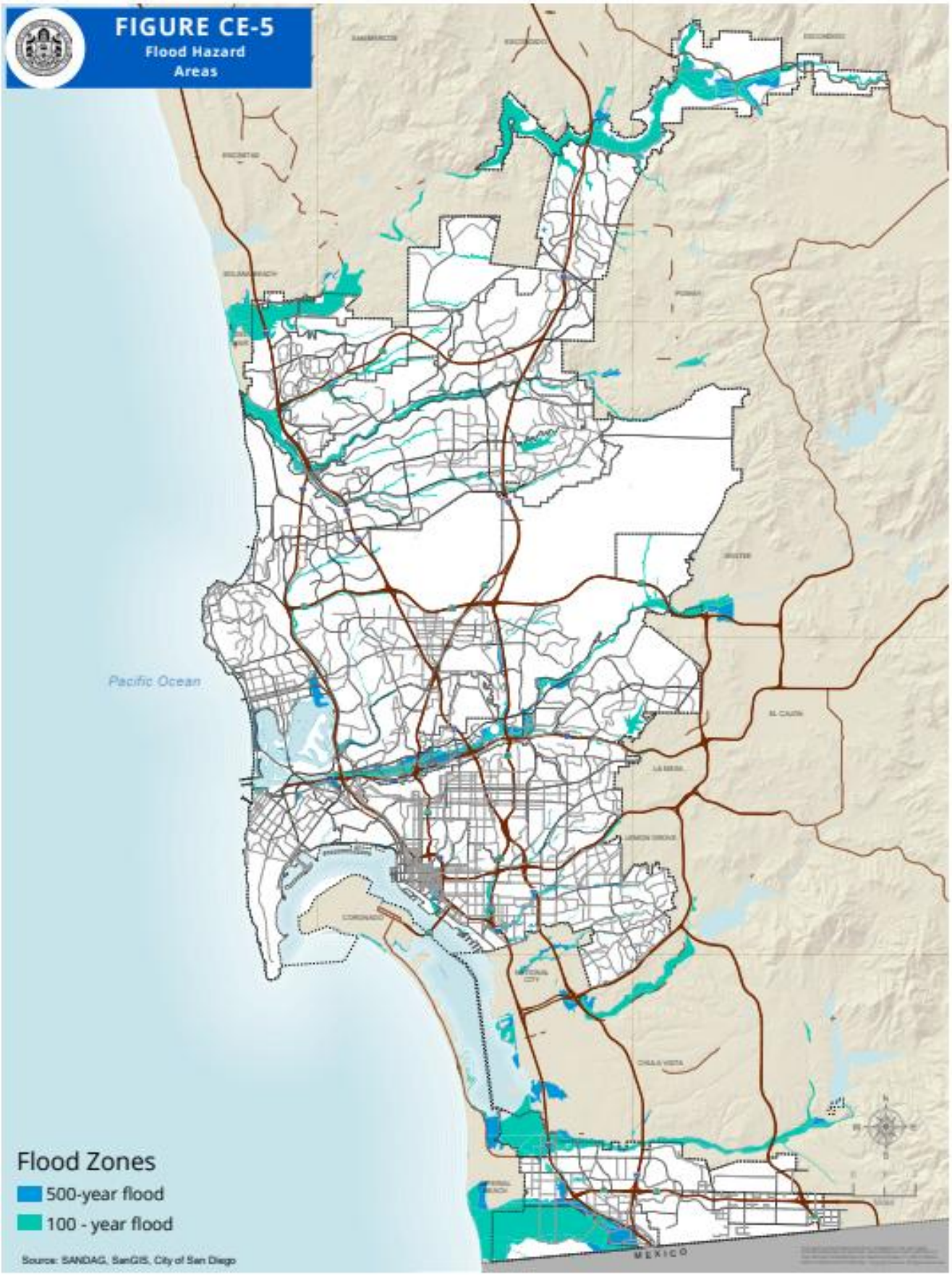
the source, rather than allowing them to enter the storm drain system.

a. Promote the provision of used oil recycling and/or hazardous waste recycling facilities and drop-off locations.
b. Review plans for new development and redevelopment for connections to the storm drain system.
c. Follow up on complaints of illegal discharges and accidental spills to storm drains, waterways, and canyons.

CE-E.7 Manage floodplains to address their multi-purpose use, including natural drainage, habitat preservation, and open space and passive recreation, while also protecting public health and safety.

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Figure CE-5 Flood Hazard Areas



F. Air Quality

Goals

- Regional air quality which meet state and federal standards.
- Reduction in greenhouse gas emissions effecting climate change.

Discussion

The City of San Diego is within the San Diego Air Basin (SDAB). The SDAB includes the coastal plains and foothills in San Diego County. Air quality in the basin is dependent on meteorology, topography, and the demographics of the region. The normal wind pattern in the air basin is a gentle, onshore breeze which builds to about seven to eleven knots in the mid-afternoon. In general, air pollutants emitted along the more densely populated, semi-arid coastal areas in the morning rush hour and throughout much of the workday are blown inland on a regular basis. After sunset as the land cools, the wind direction changes to blow towards the coast at about three to four knots.

Consequently, while the bulk of the air pollution in the region is produced along the populated coastline areas, these pollutants are transported inland on most days by late morning and early afternoon sea breezes.

San Diego is also affected by inter-basin pollutant transport as well as localized conditions. High smog levels in coastal communities occasionally occur when polluted air from the South Coast (Los Angeles) Air Basin drifts seaward and southward at night, and then blows onshore the next day during Santa Ana conditions typically occurring in late summer/early fall. Air pollution is clearly linked to health problems, especially for children and elderly community members, and those with respiratory conditions. Motor vehicles and other fossil-fuel burning vehicles are responsible for nearly 80 percent of the air pollution emissions in the San Diego region (see Table CE-2). The Mobility Element contains policies designed to promote walking/rolling, bicycling, transit use, and car pooling to help achieve transportation and environmental goals.

Diesel fuel emissions, which contain toxic particulate matter, are especially harmful to public health. Public health issues related to toxic air emissions are also discussed in the Land Use Element, Policy LU-I.14 and the Economic Prosperity Element, Policy EP-A.21.

Ground level ozone, a significant air pollutant in San Diego, is caused by internal combustion vehicles. It forms when sunlight and heat interact with vehicle emissions. Even at low levels, ozone can aggravate respiratory conditions; interfere with the ability of plants to produce and store food, and damage building materials. Pollutants such as sulfur dioxide are also responsible for increasing haze, which reduces visibility. On a much broader scale, air pollutants, including carbon dioxide from vehicles and fossil-fuel burning power plants, are identified as two significant contributors to global warming.

Under the federal Clean Air Act, the Environmental Protection Agency (EPA) sets limits on how much of a pollutant is allowed in the air anywhere in the United States. National standards were established in 1971 for six pollutants of concern. The federal government has identified health standards for six criteria pollutants: ozone (smog), carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and inhalable particulates. States have the option to add other pollutants, require more stringent compliance, or to include different exposure periods.

The California Clean Air Act mandated that a state clean air plan be developed to address meeting state standards as well as the often less stringent federal criteria. A basin plan was therefore developed and adopted in 1991, and then updated in 1994, to meet the federal one-hour standard for ozone. This 1994 local plan was combined with other regional plans to create the California State Implementation Plan (SIP). At the state level, the California Air Resources Board (ARB) gathers air quality data for the state of California, ensures the quality of this data, designs and implements air quality models, and sets ambient air quality standards for the state. California regulates the same pollutants as the federal government under the SIP, plus three others: sulfates, visibility reducing particulates, and hydrogen sulfide. The SIP was adopted by the Air Resources Board (ARB) in 1994 and was approved by the U. S. Environmental Protection Agency (EPA) in 1996.

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Locally, the San Diego County Air Pollution Control District (APCD) is the agency responsible for enforcing the federal and state air pollution regulations, and for developing local rules for the county. The attainment planning process is embodied in a regional air quality management plan developed jointly by the APCD and San Diego Association of Governments (SANDAG). San Diego's air quality has improved over the past quarter century because of effective emission control devices on motor vehicles and stricter, more enforceable regulations for industry. This accomplishment is especially noteworthy considering the region's substantial growth in population and motor vehicle mileage. Air quality will remain a persistent challenge as the number of people and cars in the region grows.

The City has taken an additional step toward improving air quality. The 2022 CAP includes an Air Quality section that recognizes the severe and longstanding health disparities related to poor air quality and summarizes all actions within the CAP that address air quality. Additionally, the City coordinates with the San Diego Air Pollution Control District (APCD) to meet Attainment Standard for State and Federal regulations and support Community Emissions Reduction Plans. For policies on indoor air quality refer to Section A, Policy CE-A.7.

Policies

CE-F.1 Develop fuel efficiency, municipal and citywide building electrification, and vehicle replacement and electrification measures to reduce fossil fuel use, consistent with the Climate Action Plan.

CE-F.2 Continue to upgrade energy conservation in City buildings and support community outreach efforts to achieve similar goals in the community.

CE-F.3 Continue to use methane as an energy source from inactive and closed landfills.

CE-F.4 Preserve and plant trees, and plants that are consistent with habitat and water conservation policies and that absorb carbon dioxide and pollutants.

CE-F.5 Promote technological innovations to help reduce automobile, truck, and other motorized equipment emissions.

CE-F.6 Encourage and provide incentives for the use of alternatives to single-occupancy vehicle use, including using public transit, carpooling, vanpooling, teleworking, bicycling, and walking/rolling. Continue to implement programs to provide City employees with incentives for the use of alternatives to single-occupancy vehicles.

CE-F.7 Influence the development of state, federal, and local actions to increase the use of alternative fuels.

CE-F.8 Influence the development of state, federal, and local efforts to increase fuel efficiency and reduce greenhouse gas emissions.

CE-F.9 Prohibit the idling of motive equipment (vehicles and equipment using fossil fuels) that is owned or leased by the City and operated by City employees unless mission necessary.

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Table CE-2 Sources of Ozone Precursor Emissions (VOC + Nox in the San Diego Region)

Source	Percentage
Other Mobile Sources (Ships, Planes, Trains, Construction)	41%
On-Road Mobile Sources (Cars, Trucks, Buses)	21%
Industry & Commerce	21%
Consumer & Home Products	21%
Agriculture	2%

Source: San Diego County Air Pollution Control District, 2022 Revision of the Air Quality Strategy.

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G. Biological Diversity

Goal

- Preservation of healthy, biologically diverse regional ecosystems and conservation of endangered, threatened, and key sensitive plants and animals and their habitats.

Discussion

San Diego County is an area of intense biodiversity richness in the United States. Many unique and endangered plants and animals are found in the San Diego region. Ensuring their survival is essential to maintaining a healthy local ecosystem. Human activity is creating a "biodiversity deficit" by destroying ecosystems faster than nature can adapt or create new ones. Rates of plants and animals extinction are currently estimated at 100 to 1,000 times higher than pre-human levels.

Many native plants communities in the region are considered sensitive because they have been greatly reduced by development. San Diego County contains more than 200 plants and animals that are federally and/or state listed as endangered, threatened or rare, proposed or candidates for listing, or otherwise considered sensitive. Over half of these plants and animals occur in the Multiple Species Conservation Program (MSCP) study area. The MSCP, adopted in 1997 to preserve and manage sensitive plants and animals at an ecosystem level, protects 56,831 acres of sensitive habitat for more than 1,000 native and non-native plants and more than 380 species of fish, amphibians, reptiles, birds and mammals.

The MSCP is a comprehensive, longterm habitat conservation planning program for southwestern San Diego County (the planned habitat preserve is shown on Figure CE-2, Multi-Habitat Planning Area) that has been developed cooperatively by participating jurisdictions/special districts in partnership with federal andstate wildlife agencies, property owners, and representatives of the development industry and environmental groups. The purpose of the MSCP is to preserve a network of habitat and open space. The plan is designed to preserve native plants and meet the habitat needs of multiple species, rather than focusing preservation efforts on one species at a time. By placing priority on the preservation of biological resources within a Multi-Habitat Planning Area (MHPA), the MSCP has streamlined existing permit procedures for development projects while preserving sensitive habitat.

The MSCP, and the associated subarea plans, seek to meet the requirements of the federal Endangered Species Act and the California Natural Community Conservation Program. Signatory agencies/districts administer their portions of the MSCP through the subarea plans and Implementing Agreements (IA). The City's MSCP Subarea Plan and IA was adopted by City Council and approved by the wildlife agencies in 1997.

In 2017, the City adopted a Vernal Pool Habitat Conservation Plan (VPHCP) to comprehensively manage and monitor the vernal pool ecosystem within the City of San Diego's jurisdiction. The VPHCP includes seven vernal pool species: San Diego fairy shrimp (Branchinecta sandiegonensis), Riverside fairy shrimp (Streptocephalus woottonii), San Diego Button Celery (Eryngium aristulantum var. parishii), Spreading navarretia (Navarretia fossalis), San Diego mesa mint (Pogogyne nudiscula). San Diego and Riverside fairy shrimp are listed by the USFWS as endangered species. With the exception of spreading navarretia which is listed as a federally threatened species, all the plant species are federally and state listed as endangered species.

Policies

CE-G.1 Preserve natural habitats pursuant to the MSCP and VPHCP, preserve rare plants and animals to the maximum extent practicable, and manage all City-owned native habitats to ensure their long-term biological viability.

a. Educate the public about the impacts invasive plants have on open space.
b. Remove, avoid, or discourage the planting of invasive plants.
c. Pursue funding for removal of established populations of invasive plants within the MHPA and open space.

CE-G.2 Prioritize, fund, acquire, and manage the MHPA and open spaces that preserve important ecological resources and provide habitat connectivity.

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CE-G.3 Implement the conservation goals/policies of the City's MSCP Subarea Plan and VPHCP, such as providing connectivity between habitats and limiting recreational access and use to appropriate areas.

CE-G.4 Protect important ecological resources when applying floodplain regulations and development guidelines.

CE-G.5 Promote aquatic biodiversity and habitat recovery by reducing hydrological alterations, such as grading a stream channel.

CE-G.6 Utilize programs, such as Biodiverse SD, to preserve habitat and open space in core biological resource areas, mitigating impacts of new development while maintaining conservation goals.

CE-G.7 Preserve the network of habitat and open space through delineation of core biological resource areas identified in the Multi-Habitat Planning Area (MHPA) consistent with the City's Biodiverse SD program, inclusive of the Vernal Pool Habitat Conservation Plan (VPHCP), and Multiple Species Conservation Plan (MSCP), which acts as the natural communities conservation program.

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H. Wetlands

Goals

- Preservation of San Diego's rich biodiversity and heritage through the protection and restoration of wetland resources.
- Preservation of all existing wetland habitat in San Diego through a "no net loss" approach.

Discussion

San Diego supports a unique assemblage of wetlands that are not specifically addressed in the Multiple Species Conservation Program (see Section G). These include tidal and freshwater marshes, and riparian wetlands. The Vernal Pool Habitat Conservation Plan addresses the preservation, management and monitoring of vernal pools and listed vernal pool species. Wetlands are vitally important to the survival of many fish, birds, and plants. Waterways and their riparian areas are also critical habitats for a variety of wildlife. Straightening, cementing over, and otherwise altering waterways and wetlands removes the opportunities for biodiversity and also impacts important ecological processes that remove pollutants and improve water quality. The health of wetland areas is an important indicator of ecosystem health, and of the sustainability of human activity within a watershed.

Wetlands protect surface water quality by slowing the erosive forces of moving water. They provide a natural means of flood control and damage prevention by reducing flood peaks, thereby protecting against the loss of life and property. Wetlands intercept and filter waterborne sediments, excess nutrients, heavy metals and other pollutants, thereby improving water quality. Wetlands also sequester carbon and provide protection against sea level rise by buffering wave energy and absorbing flood waters.

California has lost 90 percent of its historical wetlands, and only five percent of the state's coastal wetlands remain. Appreciation of the value of wetlands has grown, as have laws calling for their protection, yet wetlands are still threatened. The following policies highlight the importance of wetlands and offer guidance for their protection and restoration.

Policies

CE-H.1 Use a watershed planning approach to preserve, enhance, and restore wetlands.

CE-H.2 Facilitate public-private partnerships that improve private, federal, state and local coordination through removal of jurisdictional barriers that limit effective wetland management.

CE-H.3 Seek state and federal legislation and funding that support efforts to research, classify, and map wetlands, including vernal pools and their functions, and improve restoration and mitigation procedures.

CE-H.4 Support the long-term monitoring of restoration and mitigation efforts to track and evaluate changes in wetland acreage, functions, and values.

CE-H.5 Restore salt marshland and other associated tidal wetland and riparian habitats where feasible.

CE-H.6 Support research and demonstration projects that use created wetlands to help cleanse urban and storm water runoff, where not detrimental to natural upland and wetland habitats.

CE-H.7 Support educational and technical assistance programs, for both planning and development professionals, and the general public, on wetlands protection in the land use planning and development process.

CE-H.8 Encourage site planning that maximizes the potential biological, historic, hydrological, climate resilience, and land use benefits of wetlands.

CE-H.9 Implement a "no net loss" approach to wetlands conservation in accordance with all city, state, and federal regulations.

CE-H.10 Consider public health, access, and safety, including pest and vector control, on wetland creation and enhancement sites.

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I. Sustainable Energy

Goal

- An increase in local energy independence through conservation, efficient community design, reduced consumption, and efficient production and development of energy supplies that are diverse, efficient, environmentally sound, sustainable, and reliable.

Discussion

California's energy supply has fluctuated in its ability to meet demand over the last 30 years, notably during peak economic growth periods. San Diego's main drivers of energy demand are population, economic development, housing, and land use. Establishing more local energy sources, with an emphasis on clean, renewable sources, will provide increased economic stability and environmental benefits. Using renewable energy sources reduces dependence on fossil fuels and also helps to reduce carbon dioxide and other gases in the atmosphere. Water conservation also helps reduce energy use, as almost 60 percent of the energy used by the City organization goes for pumping water and sewage. Energy efficient land use and transportation policies are addressed in this section, as well as in the Land Use and Mobility Elements.

Policies

CE-I.1 Maintain a centralized Energy Conservation and Management Program and Comprehensive Plan for all City operations. a. Prepare and implement zero carbon emissions buildings and operations policies. b. Phase out natural gas usage in municipal facilities.

CE-I.2 Coordinate City energy planning programs with federal, state and regional agencies, electric utilities and other load-serving entities to~~. M~~ maximize energy efficiency, use of clean renewable resources, ~~and~~ demand response and provide grid infrastructure upgrades needed for electrification.

CE-I.3 Pursue state and federal funding opportunities for research and development of alternative and renewable energy sources.

CE-I.4 Maintain and promote water conservation and waste diversion programs to conserve energy.

CE-I.5 Support the installation of photovoltaic panels, community solar, and other forms of renewable energy production together with microgrids and battery storage to improve local energy reliability. a. Seek funding to incorporate renewable energy alternatives in public buildings. b. Promote the use and installation of renewable energy alternatives in new and existing development.

CE-I.6 Develop emergency contingency plans, in cooperation with other local agencies and regional suppliers, to assure essential energy supplies and reduce non-essential consumption during periods of energy shortage.

CE-I.7 Pursue investments in energy efficiency and direct sustained efforts towards eliminating inefficient energy use.

CE-I.8 Improve fuel-efficiency to reduce consumption of fossil fuels.

CE-I.9 Implement local and regional transportation policies that improve mobility and increase energy efficiency and conservation.

CE-I.10 Use renewable energy sources to generate energy to the extent feasible.

CE-I.11 Collaborate with others to develop incentives to increase the use of renewable energy sources or reduce use of non-renewable energy sources.

CE-I.12 Use small, decentralized, aesthetically-designed, and appropriately-sited energy efficient power generation facilities to the extent feasible.

CE-I.13 Promote and conduct energy conservation education.

CE-I.14 Develop energy efficiency measures to advance all-electric and zero emissions infrastructure for new construction and existing buildings, consistent with the ~~Climate Action Plan~~City's plans addressing climate change mitigation and resilience.

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~~CE-I.14~~CE-I.15 Prioritize investments in zero-emission technologies that directly benefit disadvantaged communities, low-income households, and small businesses, consistent with City plans addressing climate change mitigation and resilience.

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J. Urban Forestry

Goal

- Protection and expansion of a sustainable urban forest.

Discussion

Trees in the urban landscapes are an effective, low-technology way to help meet "green" building goals and reduce heat islands, while also achieving other environmental and economic benefits. The City's urban forest, comprised of publicly and privately owned trees, helps reduce energy consumption, improve air quality, reduce storm water runoff, decrease soil erosion, improve the pedestrian environment, reduce glare, and improve community image and aesthetics. These benefits increase when the size and extent of the tree canopy is increased. Studies have shown that urban trees offer returns far greater than their cost of planting and upkeep. For these reasons, the City has landscape standards and a policy for tree protection.

Policies

CE-J.1 Develop, nurture, and protect a sustainable urban/community forest.

a. Identify City lands and spaces that need trees and identify ways to increase permeable areas for new trees, focused in areas with the greatest needs.
b. Seek resources and take actions needed to plant, care for, and protect trees in the public right-of-way and parks and those of significant importance in our communities. Prioritize implementation in areas with the greatest needs.
c. Plant large canopy shade trees, where appropriate and with consideration of habitat and water conservation goals, in order to maximize environmental benefits. Prioritize implementation in areas with the greatest needs.
d. Seek to retain significant and mature trees.
e. Provide forest linkages to connect and enhance public parks, plazas, recreation and open space areas (see also Mobility Element, Policies ME-A.6 and ME-A.7, and Recreation Element, Policy RED.6).

CE-J.2 Include community street tree master plans in community plans. a. Prioritize community streets for street tree programs. b. Identify the types of trees proposed for those priority streets by species (with acceptable alternatives) or by design form. c. Integrate known protected trees and inventory other trees that may be eligible to be designated as a protected tree.

CE-J.3 Develop community plan street tree master plans during community plan updates in an effort to create a comprehensive citywide urban forest master plan (see Conservation Element Policy CE-J.1).

CE-J.4 Continue to require the planting of trees through the development permit process. a. Consider tree planting as mitigation for air pollution emissions, storm water runoff, and other environmental impacts as appropriate.

CE-J.5 Support public outreach efforts to educate City staff, the business community, and the general public on the environmental and economic benefits of trees.

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K. Mineral Production

Goal

- Minimal excessive aircraft-related noise on residential and other noise-sensitive land uses.

Discussion

San Diego's important mineral resources include salt, sand, and gravel, all of which have been produced in San Diego for many decades. San Diego's aggregate mineral resources (sand and gravel) provide necessary materials for the local economy. Extraction of sand, rock, and gravel, began in Mission Valley in 1913. Extraction still occurs in Mission Valley and in other areas of the City such as Carroll Canyon and Mission Gorge. There are also mining operations within the Multiple Species Conservation Program (MSCP) subarea plan, consisting mainly of sand, rock, and gravel extraction using open pit mining.

Mineral deposits that are acceptable for use as Portland Cement Concrete (PCC) grade aggregate are the rarest and most valuable of aggregate resources. The location of San Diego's high quality mineral resource areas are shown on Figure CE-6, Generalized Mineral Land Classification, as Mineral Resource Zone (MRZ)-two areas. These are areas designated for the managed production of mineral resources. State law requires cities to plan for the beneficial management of these valuable mineral resources. The use of locally mined materials for San Diego's development is desirable as it reduces the need for trucking materials over long distances. This, in turn, results in decreased energy use, and fewer traffic, infrastructure, and air quality impacts, as well as lower direct costs to the consumer and local government. Local use may also result in fewer direct mining environmental impacts to remote, less regulated areas outside the City.

Due to competing demands for precious open lands, access to aggregate reserves in western San Diego County have significantly decreased over the past 20 years. Urbanization, as well as the designation of lands within the MSCP, and the depletion of active mines, contributes to the shortage of materials. Reclamation and recycling of building materials must take on a greater importance in order to continue meeting our local needs. Recycling has the added benefit of reducing the amount of waste entering landfills.

Many of the City's existing mining operations are located along rivers and water courses, in areas with the City's Multi-Habitat Planning Area (MHPA). In general, the City's MSCP provides for the continuation of existing mining operation.

However, new or expanded mining operations on lands conserved as part of the MHPA are incompatible with MSCP preserve goals for covered species and their habitats, unless otherwise agreed to by the wildlife agencies at the time the parcel is conserved. New operations could be permitted in the MHPA if: 1) impacts have been assessed and conditions incorporated to mitigate biological impacts and restore mined areas; 2) adverse impacts to covered species in the MHPA have been mitigated consistent with the Subarea Plan; and 3) requirements of other City land use policies and regulations have been satisfied. The MSCP requires that existing and new mining operations adjacent to or within the MHPA adequately protect adjacent preserved areas and covered species.

San Diego's salt production occurs within the South San Diego Bay Unit of the San Diego National Wildlife Refuge. Within this refuge, approximately 1,050 acres of salt ponds are currently in active salt production. A commercial solar salt operation is permitted to operate within the refuge. This operation, which occurs on approximately 1,035 acres at the southern most end of San Diego Bay, has produced salt at this site for more than 130 years. The current facility consists of a series of diked ponds that facilitate the concentration and precipitation of salts from bay water. Although the salt ponds are a unique local industry, they do not represent a large share of the salt production market. As a result, salt production may be relocated.

The salt ponds are also valuable as an irreplaceable habitat for many birds. Each year, birds use the ponds to nest, feed, and roost. It is one of the few large areas remaining along the highly urbanized Southern California coast where large bird populations can gather. The U.S. Fish and Wildlife's draft Comprehensive Conservation Plan (CCP) is

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considering restoring the commercial salt ponds for wildlife.

Policies

CE-K.1 Promote the recycling and reclamation of construction materials to provide for the City's current and future growth and development needs (see also Public Facilities, Policy PF-I.1 and Conservation Element, Policy CE-A.8).

CE-K.2 Permit new or expanding mining operations within the MHPA in accordance with MSCP policies and guidelines.

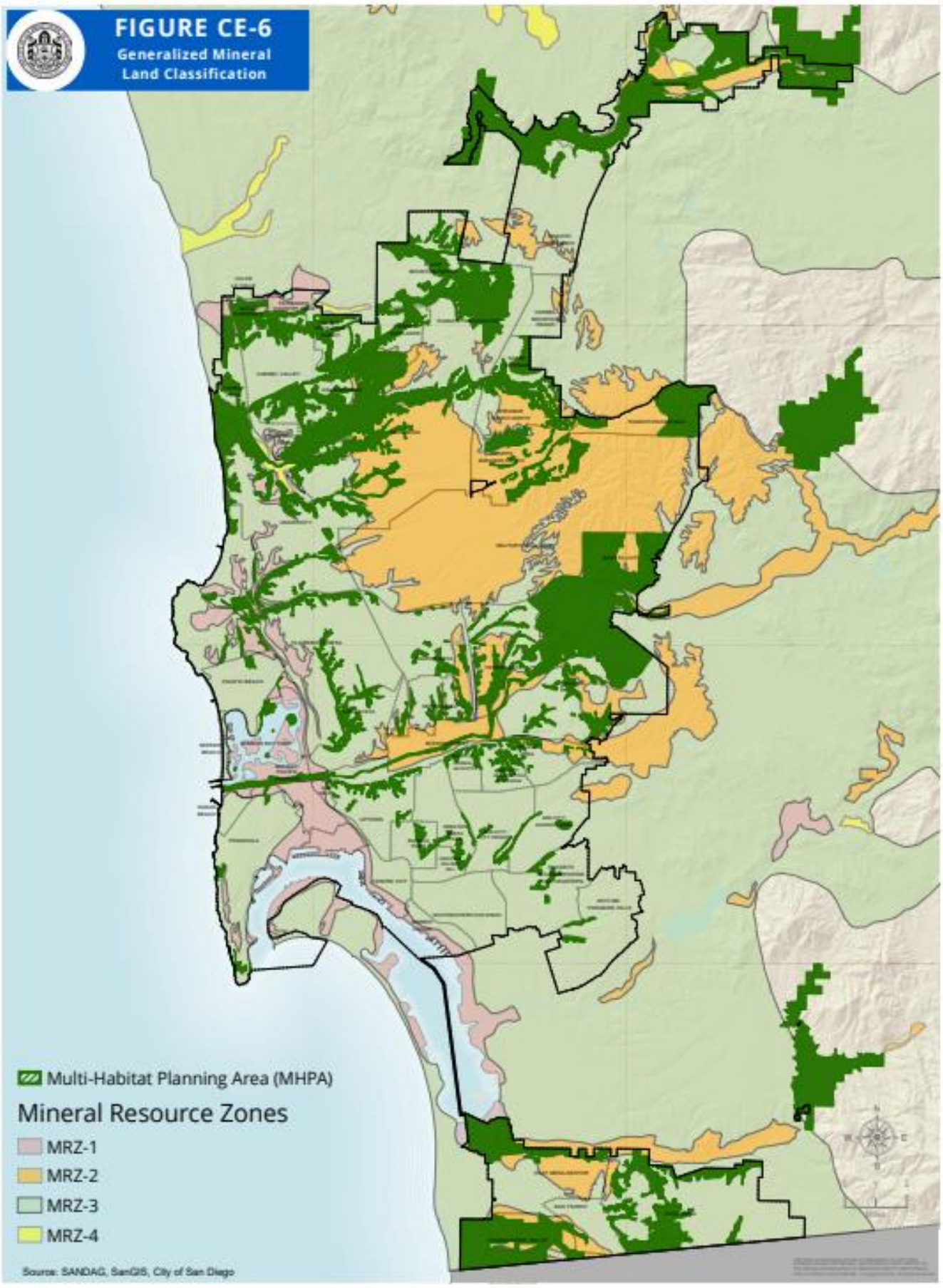
CE-K.3 Produce sand and gravel with minimal harm and disturbance to adjacent property and communities.

CE-K.4 Plan rehabilitation of depleted mineral areas to facilitate reuse consistent with state requirements, the Surface Mining and Reclamation Act (SMARA), and local planning goals and policies, including the MSCP.

CE-K.5 Consider local evaporative salt production for future economic value, open space use, and for important ecological habitat.

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Figure CE-6 Generalized Mineral Land Classification



L. Agricultural Resources

Goals

- Retention of productive agricultural lands.
- Greater use of sustainable agriculture practices.
- Reduction in land use conflicts between agriculture and other land uses.
- Retention of the rural agricultural character of river valleys.
- Expansion of urban agriculture uses.

Discussion

Agriculture has been an important factor in the history and local economy of San Diego. San Diego's unique location and combination of climate, soil types, and international border location have created an agricultural industry which produces off-season and specialty crops, including avocados, citrus, tomatoes, flowers and nursery stock.

Soils in San Diego vary appreciably in origin, degree of weathering, depth and texture. The Natural Resource Conservation Service (formerly Soil Conservation Service) has classified lands according to their productive capability, taking into account specific qualities of the soil slope of the land, degree of wetness, flooding hazards and other factors. There are still many locations in San Diego which have the productive soil and the other requisites to be especially well suited for agricultural purposes. In San Diego, the best remaining agricultural soils are found in broad river valleys. The City has developed programs to keep these valleys predominately agricultural through lease agreements, such as in San Pasqual Valley where agriculture comprises approximately 30 percent of the land use.

There is also increased public interest in urban agriculture, which is the production of food in and around cities for local consumption. Urban agriculture, including community farms and gardens, offers potential to: further sustainability goals; improve public health and equity through better access to fresh healthy food; promote food system security by reducing reliance on long-distance supply chains; reduce the amount of energy used to transport food; and to foster economic development opportunities, including micro-enterprise. A core principle of sustainability involves meeting basic human needs, such as food, shelter, and water, via renewable sources as close to their consumption as possible. Although the City has limited options for additional large-scale agriculture because of its urbanized nature, it can help support the availability of sustainable local food choices by providing opportunities for urban agriculture, and spaces suitable for local farmers' markets (see also Recreation Element, Policies RE-E.8 and RE-A.6., and Urban Design Element, Policy UD-E.1).

Policies

CE-L.1 Manage agricultural activity to minimize soil erosion and minimize the release of contaminants into surface and groundwater resources.

CE-L.2 Limit retail activity in agriculturally-designated areas to uses that are reasonably related to agriculture (e.g., sale of locally grown farm products).

CE-L.3 Encourage agricultural operations such as community farms and gardens (especially on City-leased lands) to provide for educational experiences which demonstrate the history, importance and value of agricultural operations, and to provide more healthy, sustainable, local food options.

CE-L.4 Continue water reclamation research programs to develop realistic methods of providing inexpensive means of leaching soils, irrigating crops and preventing salt water intrusion.

CE-L.5 Integrate agriculture and sustainability principles that promote clean air and water, and healthy soils, habitats, and ecosystems. a. Encourage sustainable agricultural and water quality best management practices, such as tillage, use of grass filter strips, runoff detention basins, and organic farming, on all private land and require BMPs on new or renewed City land leased for agricultural purposes. Provide the minimum amount of flood control/channelization. b. Encourage sustainable agricultural operations,

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especially on City-leased lands, to offer more sustainable, local food choices.

CE-L.6 Provide mechanisms to permit private land owners of prime agricultural lands to take advantage of the Williamson Act.

CE-L.7 Balance the economic benefits provided by agricultural uses with the competing water resource, biological and cultural resource management and recreation priorities. See also Historic Preservation Element policies HP-A.2, A.3, and A.4 concerning historical and cultural resources, and government-to-government relationships with the Kumeyaay/Diegueño tribes of San Diego. See the Conservation Element Policy CE-B.1.e and Section G for policies pertaining to native plants and biological resources.

CE-L.8 Foster an urban agriculture system that is environmentally and economically sustainable. a. Encourage the use of urban agricultural techniques that require reduced land and water use as compared to conventional methods. b. Recognize the cultural and economic benefits of providing opportunities for community members to grow healthy, affordable, culturally appropriate foods, and to augment their food budget through urban agriculture. c. Reduce waste and increase agricultural productivity through increased composting of organic waste. d. Recognize the essential role of honeybees and other pollinators in healthy ecosystems and in the food supply chain. Support safe and responsible beekeeping.

CE-L.9 Increase opportunities for urban agriculture. a. Develop land development regulations that allow urban agriculture uses in appropriate locations, with parameters designed to control potential impacts to neighboring uses and properties. b. Develop land development regulations that increase opportunities for farmers markets on public and private lands. c. Monitor implementation of urban agriculture goals and policies. d.. Support rooftop gardens and the use of edible landscape materials. e. Encourage the use of vacant land underutilized lots for urban agriculture. f. Explore potential locations for urban agricultural uses as a part of long range plans and other projects.

CE-L.10 Support food system planning that increases food system security, links local producers to local markets, creates jobs, and re-circulates food dollars in the local economy. a. Participate in policy-making, and public education and outreach efforts related to food system planning. b. Support efforts to establish food distribution centers within the region and encourage the development of a permanent Public Market in the City of San Diego. c. Plan for and reserve areas needed for local food processing, wholesaling, and distribution through the use of zoning and economic development incentives.

CE-L.11 Collaborate with public health professionals and others to maximize the public health benefits related to urban agriculture, and seek their participation in the community plan update process.

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M. Border/International Conservation

Goal

- A sustainable, safe, and healthy San Diego-Baja California border environment.

Discussion

San Diego is a part of the California-Baja California border region. While divided by the U.S. - Mexico international border, the region shares environmental issues that cross political boundaries. Rapid population growth and economic development have resulted in environmental problems and challenges. Collaboration at the local, state and federal government levels of both countries is needed to address these challenges and work toward achieving a sustainable, safe, and healthy environment. San Diego is a part of the California-Baja California border region. While divided by the U.S. - Mexico international border, the region shares environmental issues that cross political boundaries. Rapid population growth and economic development have resulted in environmental problems and challenges. Collaboration at the local, state and federal government levels of both countries is needed to address these challenges and work toward achieving a sustainable, safe, and healthy environment.

Many environmental protection and public health programs have arisen from the U.S. - Mexico collaborations. One of these is the Border Environmental Program: Border 2012 Program. This program was developed by the U.S. Environmental Protection Agency (EPA) and Mexico's Secretariat of Environment and Natural Resources (SEMARNAT), in partnership with the U.S. Department of Health and Human Services, the Mexican Secretariat of Health, and other federal agencies, with the active participation from local and state governments from both sides of the border, and U.S. border tribes. The mission of the Border 2012 program is "To protect the environment and public health in the U.S. - Mexico border region, consistent with the principles of sustainable development." The City participates in several Border 2012 task forces, as well as other border-area committees and initiatives.

San Diego's environment is also influenced by national security measures related to San Diego's location on the international border. Cars and trucks idling at the port of entry affect air quality and traffic. If biological or chemical substances were released on either side of the border, it could impact our shared air and water resources. The economic impact of border activities is discussed in the Economic Prosperity Element, and the potential response to a hazardous materials emergency (accidental or terrorist) is discussed in the Public Facilities, Services and Safety Element. Key border environmental issues and their associated conservation efforts include:

Habitat – The border region is one of the most ecologically diverse areas in the world, with a large number of threatened and endangered species and habitats. Organizations from both countries are working together to promote binational habitat corridors and protect biodiversity. The San Diego Association of Governments (SANDAG) is responsible for coordinating habitat corridor planning in the San Diego region and across San Diego's borders.

Water Quality – Water is the most limited resource in this primarily arid region. Surface and groundwater resources are threatened by contamination, including agricultural runoff, industrial discharge, and untreated sewage. Increasing demand for water has led to the rapid depletion of aquifers. Inadequate water supply and inefficient use of water could limit future regional development.

The cities of San Diego, Tijuana, and Tecate share the Tijuana River Watershed, which encompasses approximately 1,750 square miles (approximately one-third in California and two-thirds in Baja California). A watershed is an area that drains water, sediment, and dissolved materials to a common outlet. A diverse team of researchers and practitioners, as a part of a Binational Vision Project for the Tijuana River Watershed, has been working to gather baseline information, identify stakeholders, develop a binational vision, and recommend strategies for achieving the vision.

A major source of watershed pollution is derived from extensive urbanization from the cities and communities in both countries. These pollutants

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include toxins and sewage that flow into the Tijuana River and drain into the Pacific Ocean. The pollutants cause public health hazards and beach closures. Corrective action is underway through the Tijuana Sewer Rehabilitation Project to rehabilitate or replace deteriorated sewer pipes in Tijuana. In addition, the International Wastewater Treatment Plant (IWTP), constructed in the U.S. in 1997, has helped reduce the amount of dry weather flows that cross the border. However, the plant is still not in compliance with its discharge permit which requires secondary treatment. U.S. federal government actions are needed to improve the level of treatment and the quantity of sewage treated.

Groundwater is also impacted by pollutants that enter the watershed. Groundwater quality is impacted by factors including the release of toxic and non-toxic pollutants, overuse resulting in subsidence or seawater intrusion of aquifers, and pollution at wellheads and water recharge areas. The City has been involved in several binational projects related to water quality and wastewater, including working on a Tijuana aquifer report with the U.S. Department of Energy, participating in technology transfer workshops, testing wastewater in Tijuana, and exploring opportunities for the sale of recycled water to Mexico.

Air Quality – Pollutants from a number of sources including trucks and passenger vehicles, power plants and industrial facilities, agricultural operations, mining, dust from unpaved roads, and open burning of trash have affected urban and regional air quality along the U.S. - Mexico border. Air quality concerns have traditionally been dealt with separately in each nation. However, there is growing concern that air pollution from one side of the border may have negative effects on the other side, particularly since a number of new power plants have been built and are planned along the California-Baja California border. In addition, heightened security measures have slowed border-crossing times for the more than 2,500 trucks that cross the border every day. These idling trucks impact San Diego's air quality. Auto emissions from older vehicles in Mexico, that are not subject to California emissions control regulations, are also a concern. Various legislative solutions and pilot projects are being discussed to address these issues.

Waste Management – The inappropriate disposal of hazardous and solid waste poses a threat to environmental and public health. Binational workgroups have been established to assess hazardous and solid waste problems in the border area, improve the monitoring of the trans-boundary movements of hazardous waste, identify hazardous waste generators and management facilities in the region, and establish a notification system regarding new facilities. The City has signed a binational agreement along with the county of San Diego and the city of Tijuana for the notification of hazardous materials incidents along the two miles north and south of the border area.

Workgroups are also investigating waste management capacity (both institutional and in terms of infrastructure) and working to increase capacity where needed. Related to this effort, the City has provided technical assistance to the city of Tijuana in its efforts to site a new landfill. The City is also actively pursuing solutions to address used tire disposal. Piles of scrap tires are an environmental problem because they pose a risk to health and the environment from emissions from tire fires, which are difficult to extinguish, and because they serve as breeding grounds for mosquitoes.

Policies

CE-M.1 Collaborate with SANDAG to plan for, conserve, and manage habitat corridors that cross political boundaries.

CE-M.2 Continue to participate in the Tijuana River Watershed Binational Vision Project to improve the health of the watershed.

CE-M.3 Continue to support intergovernmental collaboration and participate in initiatives, programs and task forces at all three levels of government, in the U.S. and Mexico, to protect the environment, conserve resources, and protect public health in the California-Baja California border region. Areas of concern include but are not limited to those listed below.

a. Shorten border crossing times to lessen the idling of cars and trucks.
b. Prevent untreated sewage from entering the U.S. and affecting the Tijuana River Valley and South San Diego beaches.

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c. Stop trash, waste tires, and silt from crossing the border and polluting the Tijuana River Valley.

CE-M.4 Continue to develop relationships and collaborate with the Baja California cities of Tijuana, Playas de Rosarito, and Tecate to further environmental protection and conservation efforts.

CE-M.5 Collaborate with U.S. and Mexican authorities to protect the community members of border communities from harmful environmental impacts from projects on both sides of the San Diego-Baja California border.

a. Recognize that border-area community members are disproportionately at risk from environmental pollutants and take steps to reduce those risks.
b. Promote the participation of local community members and stakeholders in developing solutions to environmental problems.
c. Work with appropriate organizations to establish a trans-border environmental impact assessment process.
d. Encourage participation in, and development of mutually beneficial educational outreach projects on issues of common concern, such as illegal tire disposal.

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N. Environmental Education

Goals

- Widespread public awareness of how the individual and cumulative actions of individuals, organizations, and businesses affect the environment.
- Provision of programs that increase awareness of and promote conservation.

Discussion

Environmental education and opportunities for public discussion of environmental issues are important ways to share information about the environment and how we impact it. Education offers individuals the information they need to make informed decisions on how their everyday actions may affect the environment. Increased public awareness also leads to better collective decisions on solutions to environmental issues. Decisionmakers are better able to determine a successful approach to complex environmental issues with an informed citizenry participating and monitoring progress.

Policies

CE-N.1 Utilize state and local legislation to continue to expand City programs that create and sponsor environmental, conservation, and climate education in cooperation with K-12 schools, colleges, museums, community groups, non-profits, and government agencies.

CE-N.2 Maintain educational programs to sustain public awareness of the importance of resource conservation (e.g., energy, water, and open space), the continued existence of long-term resource demand challenges, and specific conservation tactics that are recommended.

CE-N.3 Continue and expand City and regional transportation demand management programs that promote fuel-efficient alternatives to driving alone, such as ridesharing, transit, bicycling, walking/rolling, and teleworking (see also Mobility Element, Section E).

CE-N.4 Publicize voluntary water and energy conservation measures that focus on reducing waste and decreasing the possibility of rationing and other undesirable restrictions.

CE-N.5 Actively encourage public discussion of air quality policies, understanding that it is individual decisions that are an essential component to their success.

CE-N.6 Educate community members and City staff about both short- and long-term risks associated with the use and disposal of hazardous materials.

CE-N.7 Support education programs on waste minimization, reuse, recycling and resource recovery that involve the media, schools, industry, government, and academia.

CE-N.8 Implement water quality education programs focused on pollution prevention techniques for the public, municipal employees, and businesses.

CE-N.9 Expand educational opportunities within open space lands and regional parks.

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