

4

SUSTAINABILITY AND COASTAL DEVELOPMENT



Sustainable Development. *Habitat restoration, water quality, protection from flooding, improved quality of life, and economic development were all advanced by the Pacifica State Beach restoration project.*

4.1 KEY POLICIES FOR SUSTAINABLE DEVELOPMENT

A critical challenge for the new General Plan will be to address sustainability. Sustainable development for Pacifica must involve protecting critical and sensitive habitat, protecting water resources, and adapting to the potential for increased erosion and flooding hazards due to sea level rise. Local economic development will allow more residents to work closer to home and help bring the City to fiscal sustainability.

Critical Habitat Protection

The Planning Area's undeveloped land provides habitat or potential habitat for a variety of species and natural communities. Some of these have special status, having been listed under the federal or state Endangered Species Acts or identified in the California Natural Diversity Database. Critical habitat has been designated for the steelhead trout in San Pedro Creek and on Sweeney Ridge for the California red-legged frog. Special status plant communities have been identified along Pacifica's northern coastal bluffs and in San Pedro Valley County Park.

Significant portions of the Planning Area have been noted for their potential habitat value. Parts of Sharp Park Golf Course, Mori Point and Rockaway Quarry may be considered Environmentally Sensitive Habitat Area under the provisions of the California Coastal Act. Milagra Ridge is a high habitat value area; and the need has been identified for a wildlife corridor to connect Milagra ridges to Sweeney Ridge, to connect populations at risk of isolation.

The General Plan will identify the highest priorities for habitat conservation, and strategies to achieve it. On all sites identified as having sensitive habitat or potential habitat value, detailed analysis must be conducted to determine the extent of habitat and the appropriate level and location of development that can be supported. Strategies including clustered development, transfer of development rights (TDR), and land acquisition and conservation easements will all be facilitated. These are discussed in Chapter 5.

Air Quality

The Bay Area is in nonattainment for state and Federal ozone standards and for California's standards for annual concentrations of PM 10 and PM 2.5 particulate matter, as well as the federal 24-hour standard for PM 2.5. The Bay Area Air Quality Management District (BAAQMD, or the Air District) has developed plans to meet these standards.

According to CEQA guidelines, local plans, such as Pacifica's General Plan, should be evaluated for their consistency with the most recent regional air quality plan's population and vehicle use projections and its transportation control measures. The General Plan will address air quality with policies aiming to facilitate fewer and shorter vehicle trips and other means discussed below.

Climate Change and Energy

Greenhouse Gases

Greenhouse gases (GHGs) trap heat in the Earth's atmosphere and produce the combination of effects known as global climate change. Accelerating climate change has the potential to cause a number of tangible, adverse impacts in California, including a shrinking Sierra snowpack that could threaten the state's water supply; public health threats caused by higher temperatures and more smog; damage to agriculture and forests due to reduced water storage capacity, rising temperatures, increasing salt water intrusion, flooding, and pest infestations; critical habitat modification and destruction; eroding coastlines; increased wildfire risk; and increased electricity demand.

California's Assembly Bill (AB) 32 requires the State to reduce its greenhouse gas emissions to 1990 levels by 2020. To contribute to this goal, Pacifica can pursue policies to improve energy efficiency; promote renewable energy; conserve water; reduce solid waste; promote mixed-use, infill, and high density development to reduce vehicle trips; promote alternative modes of transportation; and reduce vehicle miles traveled. Pacifica must determine its own emission

Figure 4-1: Critical and Sensitive Habitat

Special Status Communities

-  Northern Maritime Chaparral
-  Coastal Bluff Scrub (High Value/Further Analysis Needed Prior to Development)

Critical Habitat

-  Steelhead
-  California Red-Legged Frog
-  California Red Legged Frog- Critical Habitat Expansion Under Consideration

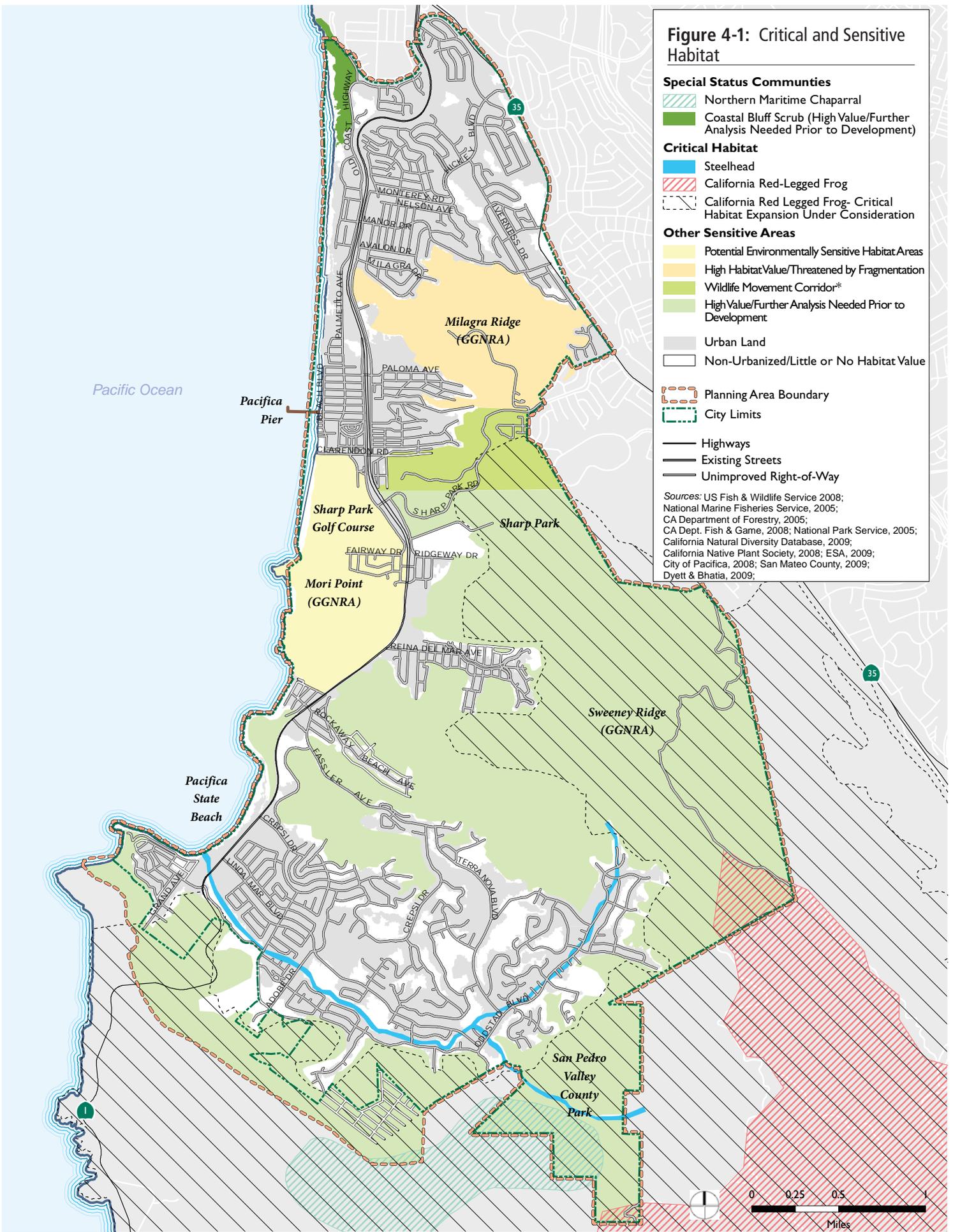
Other Sensitive Areas

-  Potential Environmentally Sensitive Habitat Areas
-  High Habitat Value/Threatened by Fragmentation
-  Wildlife Movement Corridor*
-  High Value/Further Analysis Needed Prior to Development
-  Urban Land
-  Non-Urbanized/Little or No Habitat Value

Other Features

-  Planning Area Boundary
-  City Limits
-  Highways
-  Existing Streets
-  Unimproved Right-of-Way

Sources: US Fish & Wildlife Service 2008; National Marine Fisheries Service, 2005; CA Department of Forestry, 2005; CA Dept. Fish & Game, 2008; National Park Service, 2005; California Natural Diversity Database, 2009; California Native Plant Society, 2008; ESA, 2009; City of Pacifica, 2008; San Mateo County, 2009; Dyett & Bhatia, 2009;



reduction goals and which policies and measures are most appropriate for the City.

Sea level rise is an anticipated result of global climate change that has the potential to have significant long-term impacts on Pacifica. Adaptation to sea level rise and the role of the General Plan is covered in section 4.2

Energy Conservation and Renewable Energy

California's per capita energy consumption is relatively low for the U.S., in part due to mild weather that reduces energy demand for heating and cooling, and in part due to the government's energy-efficiency programs. Petroleum and natural gas supply most of the energy consumed in California. Petroleum products provide approximately 46 percent of the state's energy demand, and natural gas provides approximately 29 percent. In 2008, 10.6 percent of all electricity in California came from renewable resources such as wind, solar, geothermal, biomass, and small hydroelectric facilities. Large hydroelectric plants generated another 11 percent of statewide electricity.

Pacifica has adopted a Green Building Ordinance that will aim to improve the energy efficiency of buildings and lower the energy content of their materials. The City included a photovoltaic solar array on the new Water Recycling Plant, and is exploring ways to increase its renewable energy production while lowering costs.

The City is also undertaking a Climate Action Plan that will estimate current emissions and identify goals and strategies for reducing emissions. The Climate Action Plan will inform related policies in the General Plan update.

Water Conservation and Recycling

In California, as in many other parts of the world, fresh water is also becoming scarce as growing populations demand more of it and new buildings and roads simultaneously reduce its quality and availability. The San Francisco Public Utilities Commis-

sion has put a cap on the amount of water it will draw from water sources. Currently, Pacifica's water demand is less than the amount allocated to Pacifica under the North Coast County Water District (NCCWD) purchase rights, and water use has been declining in recent years. Pacifica's ability to sustain reduced water use, and the extent to which the city grows in the future, will determine whether the Water District's agreement with the SFPUC remains adequate.

The Water District also is in the process of building infrastructure to use recycled water from the Calera Creek Water Recycling plant for landscaping at Sharp Park Golf Course, along Highway 1, and in certain city neighborhoods. The General Plan will include policies to support water recycling projects and to encourage low-water-use landscaping in private development.

Economic Development and Fiscal Health

A sustainable economy depends on the availability of jobs suitable to a variety of workers and providing a variety of goods and services to residents. Business diversity is important for providing the best opportunities for residents to live and work in the same area, to meet day-to-day needs for errands, and to ensure stability in the event that one sector is affected by local, regional, or national economic turmoil. Economic activity is also an important underpinning of fiscal stability for local government. This is an especially critical issue for Pacifica.

Pacifica is part of the Bay Area jobs market, and most residents work in San Francisco, elsewhere in San Mateo County or in the Silicon Valley. The city's ratio of jobs to employed residents was 0.33 in 2005 and is projected to remain relatively constant. Improving the jobs/housing balance in Pacifica would allow more residents to work closer to home, provide a better market to bring more local services to the city, and generate more revenues for the city.

The General Plan will emphasize local economic development through its land use plan and will propose policies to support tourism and specialty retail development.

Affordable Housing

Also crucial to community sustainability is the availability of housing options appropriate for a variety of income levels, household sizes, and life stages. Most owner households in Pacifica spend either less than 20 or more than 35 percent of their income on housing costs, and these categories have both grown proportionately since 2000. Meanwhile, the proportion of renters spending more than 35 percent of their income on rent grew from 30 to over 40 percent (US Census Bureau, 2000 and 2007).

As presented in Chapter 1, the Housing Element update now in process will demonstrate the City's capacity to accommodate the 311 units needed by the end of 2014 to satisfy the City's Regional Housing Needs Allocation (RHNA). Of these units, 242 must be affordable to households at below moderate income, including 170 for very low-income and extremely low-income households.

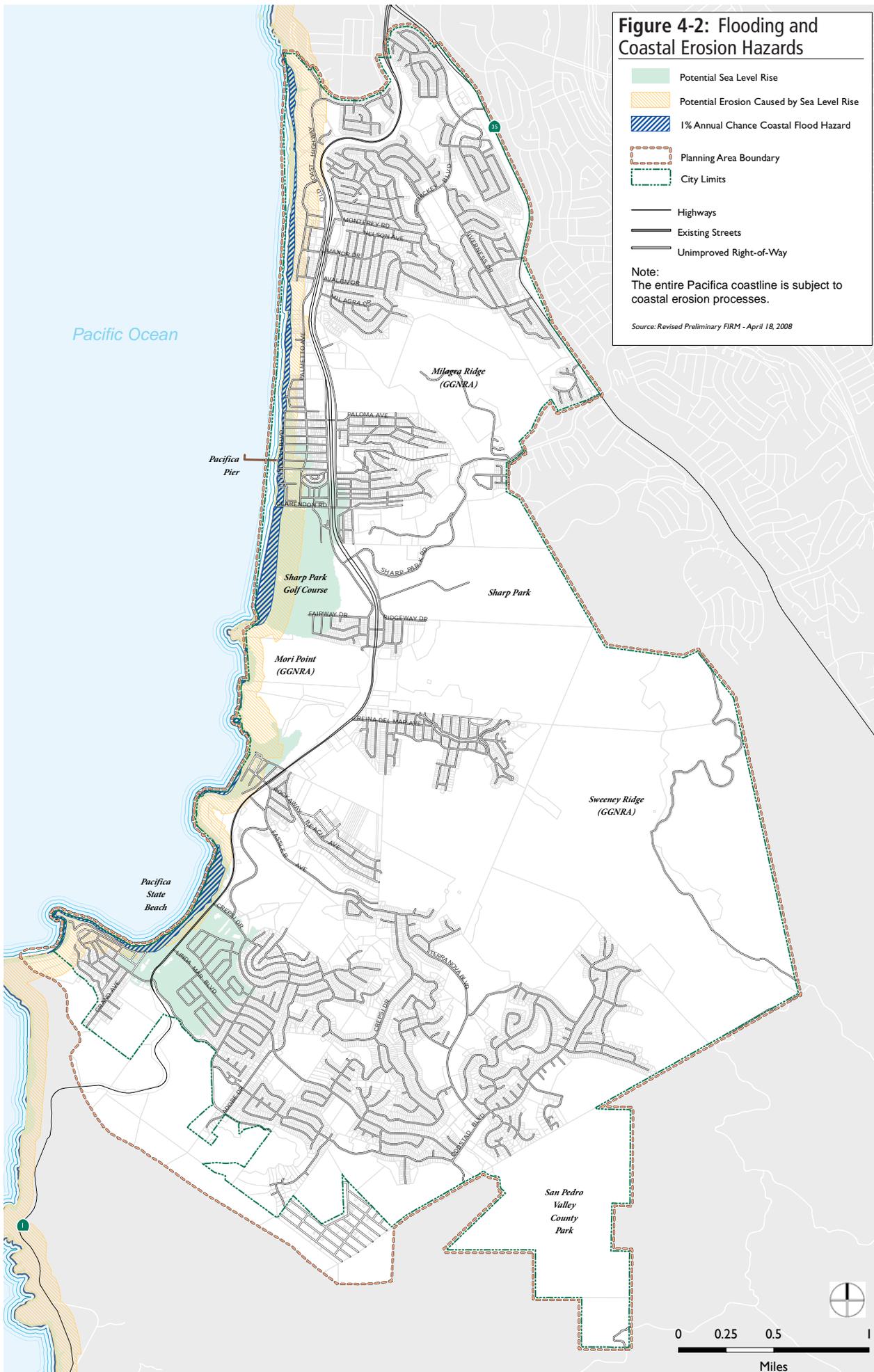
To accommodate lower-income households in the near-term and over the 20-year planning period, Pacifica will need to facilitate higher-density development at appropriate locations.

Health and Quality of Life

The physical and mental health of people in a community is related to a broad set of factors. Some of these factors are measured at the community or regional scale: air quality, toxics, noise, and access to medical care. Others are more individual—habits concerning food, alcohol and tobacco, and physical activity—but these too are influenced by the environment.

The General Plan will seek to help Pacifica achieve key public health objectives, including accessible and complete neighborhoods; public transit and safe active mobility options; access to recreational open space; safe neighborhoods and public spaces; access to healthy food; access to decent and affordable housing; access to economic opportunity; and access to medical services. A healthy population and a sustainable community are clearly interlinked.

Figure 4-2: Flooding and Coastal Erosion Hazards



4.2 ADAPTING TO POTENTIAL SEA LEVEL RISE

SEA LEVEL RISE

Projections

Sea level rise has the potential to alter the frequency and magnitude of coastal flood events in Pacifica. Current estimates of sea level rise are based on Global Climate Models (GCMs), based on work performed by the Intergovernmental Panel on Climate Change (IPCC), which released a summary report in 2007 (IPCC, 2007). The IPCC results have been used by researchers in California to investigate possible ramifications along the coast, often looking over the next 100 years. Estimates of sea level rise vary between model runs, and range from 40.2 to 57.5 inches by the year 2100 (Cayan et al., 2008; Pacific Institute, 2009.)

Increased Coastal Flooding

A 2009 study of the potential impacts of sea level rise on the California Coast developed approximate mapping to indicate potential increases in the 1 percent annual chance of coastal inundation, assuming a 55.1-inch (4.6-foot) rise in sea level (Pacific Institute, 2009). This model, as it applies to Pacifica, is illustrated in Figure 4-3. This flood mapping is approximate. It does not factor in changes to the frequency of flooding events, variation in wave patterns, or intervening topography or structures (Pacific Institute, 2009). It does suggest that areas of West Linda Mar, lower Pedro Point, Rockaway Beach, and West Sharp Park neighborhoods could be vulnerable to increased coastal flooding.

Increased Coastal Erosion

A rising sea level also has the potential to accelerate coastal erosion processes. The 2009 Pacific Institute study developed erosion models for dune and cliff/bluff backshore environments. Mean lateral erosion of dunes is estimated at 115 to 116 meters by 2025, 119m to 128m by 2050, and 132m to 175m by 2100.

Bluffs, meanwhile, are projected to have eroded by 8m to 9m by 2025, 23m to 24m by 2050, and 58m to 64m by 2100, with geology, wave exposure, and bluff toe elevation all playing important roles in producing variation (Pacific Institute, 2009). Like the flooding model, the erosion model is approximate and not appropriate for parcel-specific land use planning. It suggests that there is considerable risk of erosion along the length of Pacifica's coastline which could impact all coastal neighborhoods and coastal habitats.

Adaptation and the General Plan

The potential for sea level rise and increased coastal erosion has serious implications for Pacifica over the long term. This process must establish an adaptation approach appropriate to the problem and within the scope of a General Plan. This paper briefly outlines three proposed General Plan policy approaches which may be separate or blended together:

- Manage New Development in Along the Coast
- Preserve Undeveloped Land Along the Coast
- Strategies for “Managed Retreat”

Coastal Development Policies

Manage New Development Along the Coast

Pacifica's zoning code includes a Coastal Zone Combining District covering the area where the California Coastal Act applies. With some specific exceptions, new development within the Coastal Zone requires a coastal development permit. Depending on the site, this permit may require applicants to analyze the need for habitat protection; to conduct a geotechnical study; to submit a grading and drainage plan; to demonstrate shoreline protection; to protect coastal access or views; or to prioritize coastal-related commercial uses. All of these requirements respond to Coastal Act policies.

SHORELINE PROTECTION

With regard to shoreline protection, the Coastal Zone prohibits alteration of the shoreline, including

the placement of new shoreline protection devices, unless the alteration has been designed to eliminate or mitigate adverse impacts on local shoreline sand supply and it is necessary to protect existing development or serve coastal-dependent uses, or unless the property would be rendered undevelopable.

DEMONSTRATION OF ADAPTABILITY TO SEA LEVEL RISE

The new General Plan should reaffirm the approach of the Coastal Zone Combining District. As proposed here, the new General Plan will propose a new requirement: that approval of any new development within the Coastal Zone, or possibly a newly designated area, requires a study demonstrating adaptability to sea level rise over the expected life of the structure.

LIMITATIONS ON INCREASING DENSITY

Currently, the Coastal Zone Combining District provides an exemption from coastal development permit requirements for improvements of less than 10 percent increase in building height, bulk or floor area to existing structures, with some exceptions. Larger additions are allowed according to the underlying zoning district, but require the coastal development permit process.

The General Plan update is proposed to take a stronger stance in calling for limitations on new development near the coast. The General Plan would call for zoning to be revised to prohibit additions or rehabilitations that would increase existing building area by more than a small amount. Second, it would introduce a policy preventing future zoning changes that allow increased density within the designated zone.

ASSURANCE OF PUBLIC ACCESS

Where public access along the shore has been identified by the General Plan/Local Coastal Plan, new development directly along the coast currently must provide adequate access easements and setbacks. The new General Plan should call for “rolling easements” to be required in such cases, so that if sea level rise



Demonstration of Adaptability. Proposed new development along the coast may be required to demonstrate adaptability to potential sea level rise.



Limitations on Increase in Density. The General Plan update may call for limitations to additions and higher-density new development in vulnerable areas.

occurs, the easement moves too, and public access is maintained.

Preserve Undeveloped Land

Pacifica's existing zoning code includes good strategies intended to minimize environmental impacts and preserve open space while allowing limited development. These approaches should be affirmed by the General Plan update. The Update should also encourage outright land preservation.

CLUSTERED DEVELOPMENT AND THE HILLSIDE PRESERVATION DISTRICT

The Hillside Preservation District (HPD) requires site plans to be submitted and evaluated for responsible design on sensitive sites. Development is limited based on slope, and may be clustered to preserve sensitive portions of sites. HPD regulations apply to key coastal sites that could be developed and are potentially affected by sea level rise: the Headlands and the Quarry site. This approach remains appropriate for these sites, and sea level rise should be taken into account in site plan evaluation.

TRANSFER OF DEVELOPMENT RIGHTS

Pacifica's zoning code establishes a program intended to relocate potential development from areas where environmental impacts could be severe to areas more appropriate for development, and to preserve significant open space resources. Owners of environmentally sensitive sites may transfer development rights to other sites where higher-intensity development can be supported (TDR may also be used to shift development from one part of a site to another).

Currently, designated "sending areas" include open spaces designated in the 1988 Open Space Task Force Report; undeveloped areas identified in the current General Plan; undeveloped areas subject to Class I-IV landslides; undeveloped areas subject to flood hazards; or other areas designated by the Planning

Commission or City Council. Sites subject to coastal erosion should be specifically added to this list.

"Receiving areas" are sites zoned for planned development, two-family or multi-family housing. Sites zoned for single-family housing may be receiving sites if the density transfer is in the form of a second unit. This General Plan would make two changes to the designation of receiving sites. First, sites with commercial and mixed use zones that allow multi-family residential use would be designated as receiving sites. Second, sites within the Coastal Zone could only be receiving sites if specifically designated. These changes would help to shift development to areas where it can be supported in the long term. When development rights are transferred, the sending site or the portion of the sending site subject to TDR is permanently conserved.

LAND BANKING OR PUBLIC LAND MANAGEMENT

There is a more direct way to permanently preserve undeveloped land, and that is through land acquisition or conservation easement purchase by a land trust or public agency. In Pacifica, the Pacifica Land Trust and GGNRA have recently succeeded in securing the preservation of land on Mori Point and Pedro Point. While the City of Pacifica is not likely able to purchase land or development rights, the General Plan will assert support for appropriate land conservation actions.



Preservation of Open Land. *The northern bluffs are a high priority for permanent open space preservation along an unstable shoreline.*



Managed Retreat. *The Pacifica State Beach restoration involved acquiring and removing structures, redesigning parking areas, and rebuilding a natural dune system. There may be other opportunities in Pacifica.*

Facilitate Managed Retreat

The term “managed retreat” refers to a strategy of moving development away from the coast in order to protect the shoreline and adapt to potential sea level rise. The Pacifica State Beach restoration project took this approach recently. This project involved mainly public land, but also required public acquisition of certain parcels. Some structures were removed, while parking areas were redesigned to provide more space for beach and dunes.

Managed retreat should be incorporated into master planning for oceanfront sites in the future. Public agencies will be expected to consider sea level rise in making public investments. For example, the potential redevelopment of the Old Wastewater Treatment Plant site in West Sharp Park should require new buildings to be concentrated at the east end of the site, along Palmetto Avenue, leaving the western portion of the site for parking and new public open space.

Large private redevelopment projects should also be expected to include managed retreat strategies. The General Plan update will recommend this be added to Coastal Zone requirements.

4.3 COMMUNITY RESPONSE

Participants at the third community workshop were asked to indicate on their worksheets whether they agreed or disagreed with sea level rise adaptation approaches described above, and were given space to provide additional comments. Table 4-1 shows the level of agreement with each approach. Comments are summarized below, and included in full in Appendices B, C, and D.

Policies Receiving General Agreement

All of the proposed approaches were positively viewed by a majority of residents who responded. Least controversial was the proposal that future development or management decisions for public land should be guided by master plans that take into account potential sea level rise. Three-quarters of respondents also agreed with the idea that proposed new development in vulnerable areas should be required to demonstrate safety in the event of sea level rise. While regulatory structure and incentives, rolling ease-

ments, and clustered development all received solid agreement, several comments noted that the *specifics* of new regulations or incentive programs would be critical, and that site considerations such as habitat would be important.

Strict Limits on Future Density

The proposal to strictly limit future increases in density in the coastal zone received considerable disagreement (34 percent.) Some disagreed because they felt that no new development should be allowed to take place in the path of potential future erosion. Others pointed out that there was a need for more density in the right places in order to keep coastal land open. Several comments called for a greater degree of deference to property owners, or warned that more regulations would translate to less economic development.

TABLE 4-1: LEVEL OF AGREEMENT WITH PROPOSED APPROACHES TO COASTAL DEVELOPMENT

Question	Answers		
	Agree	Disagree	No Opinion ¹
New development within designated area requires study demonstrating safety from sea level rise	76%	14%	10%
Strict limits on future density, and do not upzone any new areas	54%	34%	11%
Rolling easement ensuring setback and public access	64%	20%	16%
Permanent open space protection with clustered development	57%	27%	16%
Master plans for public land	89%	1%	10%
Regulatory structure and incentives for shifting development away from coast	67%	26%	7%

Source: Dyett & Bhatia, 2011.

Notes:

¹ includes items not marked.

Other Approaches

Some comments on individual worksheets and table discussion notes brought up important approaches that weren't considered in the presentation:

- Protecting existing development, even if that means erecting or improving protective structures;
- Applying technology and construction methods to deal with sea level rise issues;
- Allowing the Sharp Park sea wall to erode, to restore the natural functioning of the Sharp Park lagoon, create new wetlands habitat, preserve the beach, and facilitate adaptation to sea level rise.

General Comments

Three table discussion notes and a few individual comments noted that the area identified as potentially vulnerable to inundation or erosion overlap with areas proposed for development in the Commercial Area Alternatives.

Some comments described a general view that property owners should have discretion and that regulations should be minimized. Others argued that the City must act effectively to minimize and protect against erosion.