

Land Use and Watershed Management

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Objective LU-5	Develop new public & private economic incentives for protection	Revised 2007
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Land Use and Watershed Management Goals:

- Establish and implement land use and transportation patterns and practices that protect, restore, and enhance watershed processes and functions, the Estuary's open waters, wetlands, tributary waterways, and essential upland habitats.
- Coordinate and improve planning, regulatory, and development programs of local, regional, state, and federal agencies to protect natural resources and improve the health of the Estuary and its watersheds.
- Adopt and utilize land use policies, including transportation patterns, that provide incentives for more active participation by the public and the private sector in cooperative efforts that protect and improve the Estuary and its watersheds.

Problem Statement

A number of problems impact Bay Area watersheds today. They include pollution of surface and groundwater sources; decreased infiltration; flooding, hydrologic disruption and aquifer drawdowns; loss of upland open space, riparian areas, and wetlands; and potential for catastrophic wildfires. These watershed issues, in turn, impact the health of aquatic and terrestrial wildlife, the Estuary itself, and the security and future availability of water supplies.

The population of the twelve-county San Francisco Estuary Project planning area is projected to increase by more than two million people during the next three decades. This growth and the corresponding changes in land uses will have direct and indirect impacts on the health of the Estuary and its surrounding watersheds. These impacts will include increased pollutants from point and nonpoint sources; alteration of hydrologic processes, such as infiltration, runoff, and stream flows; and impacts to associated vital habitats, such as wetlands and stream environments.

Why are healthy watersheds important?

The watersheds of the San Francisco Bay Area provide an ecological framework for considering how land and water management interact to affect the health of the Estuary and its uplands. A watershed is an area in which all the waters within it drain into one body of water. Bay Area watersheds consist of a series of nested watersheds at varying scales. Watersheds include wetlands, riparian areas, and uplands. Watersheds are the fundamental building blocks of the landscape, serving as the natural "consolidator" of all activities affecting water quality, runoff, and infiltration; hydrology; stream and wetland habitats; aquatic species; and other resources and conditions.

Protection of watersheds must consider uplands, riparian areas, floodplains, wetlands, lakes, streams, and the Estuary. Upland protection is necessary to minimize excessive sediment transport downstream, minimize pollutant inputs into waterways, and protect springs and other hydrologic features. Riparian protection provides for filtration of water pollutants, temperature moderation, stream bank stabilization and erosion control, maintenance of channel integrity, and sediment storage. Floodplain protection is also critical to protecting the resilience of watersheds and water bodies from flood events and from the effects of global climate change, such as sea level rise and changes in the timing and magnitude of rainfall. Healthy watersheds help protect natural resources and environmental quality, maintain

ecological processes, and contribute to the social and economic well-being of our communities.

How has land use contributed to current watershed conditions?

Many of our wetlands, creeks, and lakes, as well as the Estuary itself, are still adjusting to historical changes in land use, such as hydraulic mining, grazing, farming, and urbanization. The introduction of livestock grazing resulted in the replacement of native perennial grasses with exotic annual species and potential changes to infiltration and hydrology, disturbance of streams and riparian vegetation, pathogens, and nutrient loadings to watersheds. Mining debris continues to work its way from the lower river reaches and the Delta through the Golden Gate. During the 1800s and into the 1900s, a period of intensified agriculture caused creeks to be moved, wetlands drained, water tables lowered by abundant wells, and dams built, all of which have modified the natural watershed hydrology.

Reservoir development has also affected fluvial and hydrologic processes. Construction of on-stream reservoirs results in sediment buildup, which reduces downstream sediment transport and creates an imbalance. In response, streams and reservoirs downstream of dams often erode their banks and incise into their channel bottoms in search of sediment to carry and to re-establish equilibrium.

Urban development and expansion of impervious surfaces and drainage density (miles of connected runoff pathways per unit area) have affected stream channels, the magnitude and frequency of floods, and groundwater recharge functions. All these modifications have decreased the extent of perennial creeks, increased the loss of riparian habitat, and caused extirpations of native fish and other wildlife. They have also increased the amount of water and sediment sent to the lower reaches of our watersheds. Although these problems evolved over decades of land use change, there has been significant progress at state and local levels to improve planning, management, and protection of watersheds.

Achievements, 1993–2007

1) The link between watershed processes/functions, water quality, and land use is becoming more widely known among regulatory agencies, planners, building department staff, and developers.

2) New tools for implementation of best management practices (BMPs) are in place. Geographic information systems (GIS) have become an effective tool for watershed assessments and land use planning.

3) People increasingly value aquatic resources and are rediscovering and reclaiming river and Bay shorelines and recognizing their public values (e.g., riverfront redevelopment, Bay Trail).

4) Bayland Ecosystem Habitat Goals are being implemented. More than 15,000 acres of baylands have been acquired for restoration (see Wetlands Management Action WT-1.2).

5) The number of watershed stewardship groups has increased substantially, and watershed stewardship activities, such as creek cleanups, creek day-lighting, and restoration, have

increased correspondingly. Public understanding of the term “watersheds” has increased dramatically over the past few years.

6) Watershed and Estuary health continue to be improved through stormwater runoff management techniques implemented by public works departments and stormwater agencies.

7) Many governments throughout the region have adopted “green building” and “low-impact design” standards for municipal buildings, and “green business” models are taking hold in the agricultural sector (e.g., fish-friendly farming).

8) The Long Term Management Strategy for dredged material is being implemented, especially the beneficial reuse of dredged materials (see Dredging and Waterway Modification Program).

9) Local land use policies related to stream protection are being promulgated and implemented, and habitat goals reports are being developed at various levels of detail for upland areas and Bay Area streams.

10) Additional coordination and information transfer forums have emerged (e.g., Bay Area Water Forum; Integrated Regional Water[shed] Management guidance; North Bay Watershed Association).

11) State legislation and bonds have memorialized the importance of watershed management and resource protection, the value of local watershed groups and watershed-based activities, and the need for watershed planning and management. Since 1996, voters have approved more than \$20 billion for water and habitat conservation (Propositions 204, 12, 13, 40, 50, 1E, and 84). This included about \$1 billion for watershed protection, which resulted in grants for Bay Area watershed activities from CALFED agencies, the State Water Resources Control Board, the California Coastal Conservancy, and others.

12) The California Resources Agency and the California Environmental Protection Agency sponsored numerous forums, symposia, and seminars with stakeholders and partners, including the California Watershed Management Council and the CALFED Watershed Subcommittee, to support local watershed planning and management. In response to these, the state developed a strategic plan to implement recommended improvements to state programs.

Additional opportunities exist to improve protection of Bay Area watersheds as jurisdictions plan for more growth. State, regional, and local policies could add or strengthen watershed protection objectives and provide greater direction for planning programs, tools, and fiscal incentives related to new development and redevelopment. Zoning can direct development away from sensitive habitats and restore landscape features needed for watersheds to function. Improved technologies and new construction practices can be implemented to minimize surface and stormwater runoff. Habitat and open space conservation can be designed to maximize hydrologic and flood protection benefits. Transportation within existing corridors and public transit improvements can also benefit water quality and habitat protection. Finally, enforcement of existing regulations can be improved.

Challenges, 2007–2017

Watershed protection requires integrated, multi-stakeholder, multidisciplinary approaches, because no single agency has all the authority or capacity needed for comprehensive watershed planning and management. Unfortunately, existing institutions have not typically operated this way in the past.

1) The lack of a common vision and approach for watershed protection may be the biggest challenge. Protection of the San Francisco watershed requires an understanding and integration of watershed management and protection activities throughout the region. This will require definitions of watershed health that reflect watersheds of different scales, clarifications of how actions in smaller watersheds contribute to the health of regional watershed functions, and how policies and actions at the regional level can support grassroots watershed protection activities. A shared understanding of watershed issues and goals should be developed through collaborative processes and must be informed by science.

2) Systematic monitoring approaches that measure progress toward quantifiable goals are lacking. Often, investments in resource protection and restoration of watershed processes and functions are applied without appropriate performance measures in place that could indicate whether or not desired conditions are being achieved. Monitoring is also one of the last things funded, and the first dropped when funding runs short. Monitoring is critical, however, to measuring and reporting success, making needed adjustments, and securing continued support from the public.

3) Agency mandates and jurisdictions are often defined narrowly. Local agencies may be reluctant to undertake watershed-scale planning and projects because they require working with many other local jurisdictions. Agencies may have watershed objectives that appear to conflict with those of other agencies (e.g., flood control versus sediment recruitment for marshes and beaches).

4) Agency resources, including providing the staff and resources needed to sustain stakeholder processes, can be problematic.

5) Failure to consider watershed complexity and to integrate approaches may be resulting in activities or projects that do not work, produce unintended impacts, or prove counter-productive. For example, rules are made to stop erosion while streams that are hungry for sediment eat their banks and beds, and tidal marshes are starved of the sediment needed to keep up with sea level rise. The way water flows downhill naturally has been manipulated through creek and river alterations, often without anticipating how straightening channels, constricting flows through levees, narrowing floodplains, and diverting water may affect maintenance costs or risks to life and property.

Billions of dollars are spent on flood control while developers are allowed to continue to build on floodplains and in low coastal regions susceptible to inundation as sea level rises. Ongoing watershed degradation threatens downstream watershed restorations. There is a focus on cleaning polluted habitats that are disappearing due to permitted land uses.

6) Watershed protection needs to be incorporated into many types of local and regional resource protection and development plans. Many plans and activities are in place or already

underway that depend on maintaining healthy watersheds. These include wetland restorations; upland habitat preservation; water quality protection and total maximum daily loads (TMDLs) implementation; endangered species recovery actions, habitat conservation plans (HCPs), and natural community conservation plans (NCCPs); and levee protection and flood control. There are also multiple individual watershed management plans that may warrant coordination, integration, or at least regional information sharing.

7) State and federal funding specifically for “watershed” activities is diminishing, and watersheds are not a traditional responsibility for most local agencies. Recent bond funds have not explicitly designated as much funding for watershed activities as earlier propositions. Proposition 84, however, provides \$138 million to the Bay Area for regional water planning that allows for watershed management activities and related natural resource protection. Therefore, it is critical that the integral role of watershed protection and management be linked to environmental protection, habitat and species conservation, water supply and management, flooding and public safety, and public health. Working with private interests to understand how healthy streams and watersheds can revitalize their communities and contribute to social and economic well-being will also be critical.

Recommended Approach

The following actions are designed to improve planning and management of the lands surrounding the San Francisco Bay and Sacramento-San Joaquin Delta to protect and enhance the health of the Estuary. The actions recognize the importance of integrating management of the Estuary with the existing functions of state, regional, and local governments. Furthermore, these actions reflect a need to protect and enhance the Estuary while striving to ensure a sustainable economy.

First, actions are identified that would use existing mechanisms to improve the way that state government plans for and manages the resources of the Estuary. These include amendments to state laws and policies and integration of estuarine planning with major initiatives, such as growth management and regional biodiversity. Second, actions are identified that would improve the efficiency and effectiveness of land use decision-making through improved regional integration. These include using existing regional entities, such as the Delta Protection Commission, encouraging growth in appropriate areas, and researching future population change. Third, actions are identified to undertake watershed planning to implement land use practices that are geographically targeted, locally tailored, and cost-effective. Fourth, actions are identified to improve land use practices through education. Finally, actions are recommended to provide local government with adequate financial support for implementation and to establish economic incentives for resource protection.

Land Use and Watershed Management Actions

Many of the actions identified below will require additional financial resources and technical assistance that must be provided to local governments to enable effective implementation. Actions identified under Objective LU-5 specifically address the provision of financial resources to local government. Refer also to “Chapter 4: Implementation” for further detail regarding financing actions.

Objective LU-1

Use existing institutional capacity to improve planning, regulatory, and development programs of local, regional, and state agencies to protect the resources of the Estuary, in concert with a sustainable economy.

ACTION LU-1.1 (Revised 2007)

Local land use jurisdictions' General Plans should incorporate watershed protection goals for wetlands and stream environments and to reduce pollutants in runoff.

Who: Local governments and Governor's Office of Planning and Research

What: Goals, policies, and programs should more fully integrate Watershed Protection Plans and Stormwater Management Plans into local General Plans to protect wetlands and stream environments and reduce pollutants in runoff. To facilitate this integration in a uniform and consistent manner, state guidelines⁵ should be referenced for data and analysis, development policies, and technical assistance. These tools are useful when developing an optional water element with watershed-based policies, or to use a mandated element, such as the safety element.

Watershed-based policies are suggested for maintaining healthy and functional watersheds, ranging from land use designations (or minimum parcel sizes) that protect floodplains, recharge areas, riparian corridors, wetlands, and other ecologically significant lands to erosion control policies and standards to maintain water quality. Setbacks from riparian corridors, lakes, ponds, and wetlands are typical, as are low-intensity land uses that maintain rainwater and runoff infiltration functions in groundwater recharge zones or water supply watersheds. Watershed-based policies also provide an opportunity to integrate state and federal requirements for protection of wetlands and endangered species habitat. The Watershed Protection Plans would be developed as specified in Actions LU-2.6 and LU-2.6.1.

When: Ongoing–2016

Cost: \$\$; substantial cost savings could be achieved through a countywide approach.

Performance Measures:

- 1) Percentage of cities/other government entities with adopted General Plan revisions that include watershed goals, such as protection of flood zones, riparian areas, groundwater recharge areas, etc. (via annual survey)
- 2) Percentage of General Plans including Ahwahnee Principles (via annual survey)

ACTION LU-1.1.1 (New 2007): *Provide assistance to local agencies to ensure that applicable nonpoint source control elements are incorporated into local government and business practices.*

⁵ State of California, Governor's Office of Planning and Research, *State of California General Plan Guidelines* (2003), www.opr.ca.gov/planning/PDFs/General_Plan_Guidelines_2003.pdf.

Who: Regional Water Quality Control Boards, State Water Resources Control Board, California Coastal Commission, San Francisco Bay Conservation and Development Commission, counties and cities, and special districts

What: State and local agencies should provide funds and assistance to local government to implement California's Nonpoint Source Pollution Plan⁶ that deals with diffuse (nonpoint) sources of pollution in conformance with federal requirements.⁷ The Nonpoint Source Plan includes sixty-one nonpoint source management measures, such as low-impact development, restoration of hydrologic processes, and zoning for stream and wetlands protection. After the initial five-year implementation phase of the Nonpoint Source Plan, agencies should provide tools (including expanded financing options) and guidance for prioritizing applicable elements of the Nonpoint Source Plan and incorporating that guidance into specific local codes and operation/maintenance manuals. This will minimize the adverse influences of many land use practices on water quality and beneficial use attainment.

When: 2007–2010

Cost: \$\$ (Staff resources needed for technology transfer and guidance)

Performance Measures:

- 1) Number of adopted codes, manuals, training and certification programs, and tracking systems that incorporate principles of the Nonpoint Source Implementation Plan by city and county jurisdiction (via annual survey)

- 2) Knowledge of Nonpoint Source Implementation Plan and where to get help in order to address nonpoint source issues (via survey to local governments)

ACTION LU-1.2 (Revised 2007)

Amend the California Environmental Quality Act (CEQA) Guidelines⁸ to add simple and concise criteria for assessing flooding impacts and the effect of cumulative environmental impacts on the Estuary when adopting or reviewing General Plans or Local Coastal Plans.

Who: California Resources Agency, Councils of Governments, and Regional Water Quality Control Boards

What: The California Environmental Quality Act (CEQA) checklist should be improved to ensure that projects are evaluated for flood impact pursuant to current state policy.⁹ Particular attention should be given to improving the checklist for addressing flooding impacts under the Hydrology and Water Quality section of Appendix G of the CEQA Guidelines.

⁶ California Environmental Protection Agency, State Water Resources Control Board, *Nonpoint Source Pollution Control Program*, www.swrcb.ca.gov/nps/protecting.html.

⁷ [Federal requirements are found in the] *Clean Water Act (CWA)* and the *Coastal Zone Act Reauthorization Amendments of 1990 (CZARA)*, Section 6217.

⁸ *California Environmental Quality Act (CEQA)*, Appendix G, Environmental Checklist Form, ceres.ca.gov/topic/env_law/ceqa/guidelines/Appendix_G.html.

⁹ State of California, Department of Water Resources, *California Floodplain Management Report* (2002), recommendation #37, page 46, fpmtaskforce.water.ca.gov/.

The California Resources Agency should also amend the California Environmental Quality Act Guidelines to add simple and concise criteria for assessing the cumulative environmental impacts on the Estuary and its watersheds, including floodplains within the twelve Bay Area and Delta counties, when adopting or reviewing General Plans or Local Coastal Plans. CEQA should require project proponents to define major cumulative impacts and should set forth concise criteria for evaluating these classes of impacts, including data to be collected and analyzed. The criteria should address potential impacts to wetlands, streams, and water quality. These Guidelines should apply at the General Plan level in portions of the Estuary planning area where watershed protection plans have not been prepared and certified (as specified in Action LU-3.1, Watershed Management Plans will include cumulative impact assessment). This is intended to provide an incentive for preparation of Watershed Management Plans.

When: Immediately

Cost: \$\$

Uncertainty: Staff costs, printing

Performance Measures:

- 1) Update CEQA checklist to include flooding impact evaluation.
- 2) Number or percentage of environmental impact reports/environmental assessments that consider impacts to flood attenuation capabilities

ACTION LU-1.3 (Revised 2007)

Integrate protection of the Estuary and its watersheds with other state land use-related initiatives and policies.

Who: State agencies and local governments

What: All state entities involved in economic and infrastructure development must ensure consistency with state planning priorities in accordance with state guidance¹⁰ and its enabling legislation.¹¹ This includes demonstrating that consistency annually to the Governor's office or Legislature and to the California Department of Finance when requesting infrastructure funding. Since watersheds, floodplains, and wetlands are recognized by the state as deserving special protection, infrastructure planning should avoid impacts to their values and functions. Additional legislation¹² requires sustainable planning principles that both the state agencies and local governments are to incorporate into their planning and also requires these planning principles to govern state funding for infrastructure projects.

When: Ongoing

¹⁰ State of California, Governor's Office of Planning and Research, *Governor's Environmental Goals and Policy Report* (2003), www.opr.ca.gov/EnvGoals/PDFs/EGPR--11-10-03.pdf.

¹¹ California Government Code Section 65041.

¹² AB 857 (Wiggins), Chapter 1016, Statutes of 2002.

Cost: \$ (Staff resources at Governor's Office of Planning and Research to work with each state agency to ensure consistency with state goals and priorities)

Performance Measure:

Percentage of state agencies with functional plans and their degree of consistency with state planning priorities

ACTION LU-1.4 (New 2007)

Promote coordinated permitting processes among federal, state, and local programs to encourage and expedite restoration and stewardship activities by local agencies, citizens, and nonprofit conservation groups and organizations.

Who: U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Natural Resource Conservation Service, California Department of Fish and Game, San Francisco Bay Conservation and Development Commission, Regional Water Quality Control Boards, Association of Bay Area Governments, Resource Conservation Districts, and local governments

What: Agencies should schedule joint reviews of prospective grant proposals and projects in the early planning stages to reduce conflicts and overall consultations. Agencies should ensure that single application processes, such as the Joint Aquatic Resources Permit Application (JARPA), are reviewed in a timely fashion. Individual agencies should work together more closely to provide programmatic environmental impact reports, certifications, and permits for restoration programs and practices. Multiple permitting agencies should establish processes for permit coordination for specified activities at watershed or regional scales.

The benefits of a coordinated approach have been demonstrated by a partnership's success in getting agricultural landowners to implement erosion control best management practices in Elkhorn Slough by coordinating all necessary state and federal permits, making site reviews available to all regulatory agencies, and providing for quality control assurance. Some counties and Resource Conservation Districts have developed a coordinated permit process for projects on agricultural lands that includes coordinated site visits by permitting agencies, pre-project design review, and permits issued for an annual group of projects.

Landowners, local agencies, restoration professionals, watershed groups, and others have asked that Bay Area agencies better coordinate permitting processes to encourage and facilitate restoration projects, best management practices, and stewardship activities to protect and restore habitats, water quality, and watersheds. These activities may also be used to assist in total maximum daily load (TMDL) implementation and for stormwater management, and should include:

- 1) Steps should be taken to improve the use and efficiency of the Joint Aquatic Resources Permit Application (JARPA) by requesting the Association of Bay Area Governments to reconvene agencies to update JARPA and by asking agencies to recommit to using it.

2) The Regional Water Quality Control Boards and other agencies should work with interested stakeholders to implement permit coordination for biotechnical bank stabilization, restoration, and erosion control practices where possible.

3) State, regional, and local county agencies should develop ways to expedite permitting for abandoned mine cleanup in Bay Area and Delta counties.

4) State agencies should work together to develop exemption from CEQA requirements for small restoration projects.

When: Ongoing

Cost: \$

Uncertainty: Agency staff costs

Performance Measures:

1) Develop a coordinated permitting process for best management practices (BMPs) for construction and other similar projects, based on other successful efforts.

2) Percentage of projects successfully completed due to updated permitting process

3) Percentage decrease in average permit processing time

4) Amount of funding provided to “permit brokers,” such as Resource Conservation Districts, to coordinate and follow through on permit coordination

ACTION LU-1.5 (LU-3.2 in 1993 CCMP; Revised 2007)

Provide incentives and promote the use of building, planning, and maintenance guidelines for site planning and implementation of best management practices (BMPs) as related to stormwater and encourage local jurisdictions to adopt these guidelines as local ordinances.

Who: Local governments, Regional Water Quality Control Boards, Councils of Government, special districts, San Francisco Bay Conservation and Development Commission, Bay Area Stormwater Management Agencies Association, California Stormwater Quality Association, landowners, and non-governmental organizations

What: Local governments and natural resource and regulatory agencies should cooperate to regularly update and implement consistent guidelines for site planning, landscape design, and water conservation to reduce adverse effects on estuarine resources. Such guidelines should provide consistent and uniform criteria and standards that will include erosion control and pollution prevention measures, designation of appropriate buffer areas, construction and design standards, and guidelines for public access, as well as wetland and riparian protection and enhancement. These guidelines could be patterned after *Start at the Source*,¹³ the design

¹³ Bay Area Stormwater Management Agencies Association (BASMAA), *Start at the Source: Design Guidance Manual for Stormwater Quality Protection* (1999), <http://www.basmaa.org/resources/files/Start%20at%20the%20Source%20-%20Design%20Guidance%20Manual%20for%20Stormwater%20Quality%20Protection.pdf>

guidance manual produced by the Bay Area Stormwater Management Agencies Association and take advantage of complementary existing guidelines already in use (e.g., San Francisco Bay Conservation and Development Commission public access guidelines¹⁴).

When: Ongoing

Cost: \$

Performance Measures:

- 1) Percentage of local jurisdictions that adopt stormwater management guidelines (modeled after *Start at the Source* guidelines) in governance documents or ordinances that are designed to protect and improve the Estuary (via annual survey)
- 2) Number of training sessions for local government staff covering these practices

ACTION LU-1.6 (New 2007)

Continue and enhance training and certification for planners, public works departments, consultants, and builders on sustainable design and building practices with the goal of preventing or minimizing alteration of watershed functions (e.g., flood water conveyance, groundwater infiltration, stream channel and floodplain maintenance), and preventing construction-related erosion and post-construction pollution.

Who: Local governments, building associations, Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, Bay Area Stormwater Management Agencies Association, California Stormwater Quality Association, San Francisco Estuary Project, local government commissions, Councils of Government

What: Provide education, training, and certification for local agency staff, civil engineers, planners, architects, and the construction industry on sustainable design principles and building practices, such as those delineated in current guidelines¹⁵ and the Ahwahnee Principles for Resource-Efficient Communities from the Local Government Commission.¹⁶ Municipal governments should adopt the Ahwahnee Principles or equivalent smart growth building guidelines into local ordinances. Municipalities should also consider developing potential certification programs as part of building permit requirements, in conjunction with the regional municipal stormwater permit and Phase II stormwater permitting strategies.

When: 2006 and ongoing

Cost: Training workshops range from \$60,000 to \$80,000 annually for organizing and staffing

¹⁴ San Francisco Bay Conservation and Development Commission (BCDC), *Shoreline Spaces: Public Access Design Guidelines for the San Francisco Bay* (2005), www.bcdc.ca.gov/pdf/planning/PADG.pdf.

¹⁵ Current guidelines include BASMAA, *Start at the Source*, <http://www.basmaa.org/resources/files/Start%20at%20the%20Source%20-%20Design%20Guidance%20Manual%20for%20Stormwater%20Quality%20Protection.pdf>; United States Environmental Protection Agency (US EPA), *Low Impact Development Design Strategies: An Integrated Design Approach*, www.epa.gov/owow/nps/lidnatl.pdf; and San Francisco Bay Regional Water Quality Control Board, *Erosion and Sediment Control Field Manual*.

¹⁶ Local Government Commission, *Ahwahnee Principles*, www.lgc.org/ahwahnee/principles.html.

Performance Measures:

- 1) Number of training sessions and attendees receiving certification per year
- 2) Percentage of municipalities adopting and implementing Ahwahnee Principles or equivalent into building/development permits or ordinances (via annual survey)
- 3) Increase in knowledge of sustainable design and building practices (via survey)

Objective LU-2

Coordinate and improve integrated and regional management for land use, water supply and recycled water, stormwater management and flood protection, habitat and watershed protection, transportation, housing, and physical infrastructure, to both protect the Estuary and its watersheds and provide for a sustainable economy.

ACTION LU-2.1 (Revised 2007)

Regional agencies should develop consistent policies that include anticipated impacts of and responses to global climate change and sea level rise to protect the economic and natural resources of the Estuary and its watersheds.

Who: Councils of Governments, Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, and Delta Protection Commission

What: In coordination with local governments, regional agencies, such as the Councils of Governments, the Regional Water Quality Control Boards, the Delta Protection Commission, and the San Francisco Bay Conservation and Development Commission, should establish policies that coordinate land use and transportation patterns and processes in the context of sea level rise and global climate change. Such coordination should promote restoration and preservation of the Estuary and its natural resources, in concert with a sustainable economy.

The regional agencies should establish a consistent framework for local governments to manage uncertainties and risks related to sea level rise, altered rainfall, and runoff patterns; plan for resiliency measures in light of global climate change; and protect: 1) watersheds, 2) stream environments, and 3) wetlands through coordination with local governments, which will be responsible for preparing plans and policies and implementing ordinances that carry out the policies. The policies, plans, and ordinances prepared by local governments shall be reviewed by the appropriate state or regional agency. This review would also ensure consistency with federal mandates that address nonpoint source pollution. The resulting local policies and plans should be consistent with the regional plans through a coordinated acceptance process jointly administered by regional commissions and local governments.

When: Ongoing

Cost: \$\$\$\$\$

Performance Measures:

- 1) Develop a framework for local governments to manage uncertainties and risks related to global climate change.

2) Number of regional agencies that have included risk management plans related to global climate change in their policy documents (via annual survey)

ACTION LU-2.2 (Revised 2007)

Adopt and implement policies and plans to promote compact, contiguous, and infill development in both the nine-county Bay Area and the three-county Delta region.

Who: Councils of Governments, local and county governments, California Department of Transportation, Metropolitan Transportation Commission, other transit authorities, San Francisco Bay Conservation and Development Commission, and Delta Protection Commission

What: Adopt sustainable development policies, such as “smart growth” and Ahwahnee Principles,¹⁷ that encourage economic development within existing incorporated city limits or existing urban service areas in a manner consistent with protection of the Estuary and its watersheds. Investigate options for accomplishing compact, contiguous development, such as the establishment of clear urban growth boundaries in portions of the nine-county Bay Area and the three-county Delta region. Urban growth boundaries would be intended to create added certainty for communities, landowners, government agencies, and developers, and to provide clearer protection for natural resources than existing state guidelines for the identification of urban sphere-of-influence lines. These policies would also support transit-oriented development and contribute to global climate protection.

Additional options to be investigated for accomplishing compact, contiguous development may include, but are not limited to, tax and zoning incentives, resource protection zones, and infrastructure investment strategies.

As policies and plans are prepared that address land use, population growth, air quality, and transportation, they should be designed to achieve compact, contiguous development. Urban growth should be directed away from resource protection areas, such as wetlands, stream environment zones, and wildlife corridors. Urban growth areas should be identified, and new development encouraged in these areas.

When: Ongoing

Cost: \$\$\$\$

Performance Measures:

1) Percentage of jurisdictions that adopt Ahwahnee Principles or similar smart growth goals (via annual survey)

2) Acres of infill developments

ACTION LU-2.3 (New 2007)

Adopt and implement regional policies to protect and restore natural floodplains.

¹⁷ Local Government Commission, *Ahwahnee Principles*, www.lgc.org/ahwahnee/principles.html.

Who: Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, California Reclamation Board, California Department of Fish and Game, Delta Protection Commission, U.S. Army Corps of Engineers, and Federal Emergency Management Agency

What: Provide policy guidance and incentives to local governments and local organizations that encourage flooding and land use planning that protects and restores natural floodplains, minimizes risks to lives and infrastructure, and avoids the use of impervious surfaces. These policies should assist with implementation and long-term monitoring of and compliance with regional restoration and protection goals and objectives. The guidance should take into account global climate change to recognize the effects of sea level rise, including Delta impacts.

When: 2007–2020

Cost: \$\$\$ (Program implementation)

Performance Measures:

- 1) Percentage of updated General Plans, regulatory policies, and other governing processes that demonstrate floodplain protection and restoration and minimization of impervious surfaces to mitigate the effects of rising sea level and global climate change (via annual survey)
- 2) Percentage of restored floodplain
- 3) Percentage of effective impervious area

ACTION LU-2.4 (Revised 2007)

Develop consistent data-gathering and reporting systems for the Land Use and Watershed Management Program performance measures contained in the CCMP. Develop similar data-gathering and reporting systems for the watershed health indicators referred to under Action LU-3.2 that could also be used for scenario-planning.

Who: Local government agencies, Regional Water Quality Control Boards, Councils of Governments, Metropolitan Transportation Commission, California Department of Water Resources, Governor’s Office of Planning and Research, California Department of Transportation, universities, U.S. Environmental Protection Agency, and San Francisco Estuary Institute

What: To better quantify progress on the Land Use and Watershed Management Program of the CCMP, data will have to be collected, assembled, and analyzed to allow tracking and evaluation of the performance measures. Many performance measures are newly included in the CCMP in 2007, and specific action item reporting mechanisms were not in place at the time of CCMP adoption in 1993. The Land Use and Watershed Management Program also calls for the development of watershed health indicators capable of tracking quantifiable goals (see Action LU-3.2). Once the indicators are developed, a companion system of data

collection and analysis will be needed that is capable of linking implementation of policies, programs, and projects to desired environmental and socioeconomic outcomes.

Indicators will only be useful if they can be consistently monitored and reported upon. For forecasting and modeling purposes, the development of a standardized system and appropriate indicators to evaluate future population, land use, and water use changes for the nine Bay Area and three Delta counties is particularly important. The data generated by this monitoring system can be used as input into decision-making tools that can help achieve future desirable land use patterns in accordance with recommendations throughout this program.

When: 2007 and ongoing

Cost: Performance measure system development: \$
Ongoing support: \$\$

Performance Measures:

- 1) Develop indicators to track the progress of policy and project implementation.
- 2) Number of organizations/agencies that adopt indicators and are engaged in tracking progress

ACTION LU-2.5 (New 2007)

Review and update the San Francisco Bay Area Integrated Regional Water Management Plan as needed and ensure that it includes improved land use planning and watershed protection.

Who: Signatories to the San Francisco Bay Area Integrated Regional Water Management Plan, cities and counties, land use agencies, and other stakeholder groups

What: Water supply, flood management, stormwater, natural resource, and water recycling agencies (publicly owned treatment works) developed an Integrated Regional Water Management Plan in 2006 in an effort to realize efficiencies of scope, reduce conflicts among various water management and habitat protection and recovery goals, and identify projects with multiple benefits. Plan preparation was motivated by the funding incentives provided by bond legislation and represents a step toward coordinated project implementation that extends beyond traditional jurisdictional boundaries.

As the knowledge base increases about where opportunities for multipurpose projects are located and what kinds of synergies can be created among projects serving water supply, recycling, flood protection, and aquatic habitat protection needs, the initial plan should be updated as needed and used as guidance for restoration and development projects. The plan should move toward developing performance measures, performance targets, and milestones to ensure achieving them. It should also include revisiting the criteria for projects to provide for increased stakeholder involvement and input, and for the potential impacts of global climate change.

When: 2007 and periodically thereafter as needed

Cost: \$ (Program updates)

Performance Measures:

- 1) Number of Integrated Regional Water Management Plan updates that include new candidate watershed protection and restoration projects ready for implementation, with associated documentation
- 2) Percentage of Integrated Regional Water Management Plan projects with performance measures and other milestones to track progress in implementing the plan's goals

ACTION LU-2.6 (Revised 2007)

Prepare and implement multi-objective Watershed Management Plans that address watershed needs and priorities at varying scales and recognize their different functions and origins.

Who: Local governments and agencies, Resource Conservation Districts, Regional Water Quality Control Boards, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, San Francisco Bay Conservation and Development Commission, landowners, non-governmental organizations, various resource agencies, and other organizations leading watershed management planning efforts

What: Watershed management planning activities, to date, have had different origins and functions that can be grouped into four major, distinct categories:

- Local plans focused on recognized community needs and designed to solve specific issues;
- Plans developed for solving resource conflict issues and intended to meet multiple objectives (e.g., flood protection, water supply reliability, natural resource and water quality protection, recreation);
- Plans as a tool to achieve integration of compartmentalized agency business practices and to break through jurisdictional and programmatic barriers with the goal of achieving economies of scope and scale; and
- Plans to implement regulatory and mitigation requirements.

Regardless of scale and intended initial function, a comprehensive Watershed Management Plan ultimately should serve as an integration tool to address multiple objectives and include the following complementary elements where relevant:

- 1) Wetlands, riparian, and floodplain protection
- 2) Habitat and species protection
- 3) Reduction of pollutants in runoff

- 4) Flood attenuation
- 5) Environmental justice
- 6) Water supply
- 7) Recreation

Comprehensive Watershed Management Plans should include and integrate existing and emerging plans, programs, and activities that affect or are intended to protect watersheds. For example, a comprehensive Watershed Management Plan should incorporate regional and local nonpoint source action plans, total maximum daily load implementation plans, discharge waivers, stormwater management plans, stewardship and restoration plans, open space and habitat protection plans, implementation plans for stream and wetland system protection policies (see Action LU-2.7), and other relevant elements.

Watershed Management Plans should be prepared in a manner that is consistent with the relevant goals, objectives, and actions contained in other program area sections of the CCMP, such as Wetlands Management, Pollution Prevention and Reduction, Aquatic Resources, and Wildlife. Guidance for developing Watershed Management Plans can be found in many places. State legislation¹⁸ has defined requirements for “local watershed plans” for the purpose of state grant programs, including a description of natural resource conditions, water quality improvement measures, monitoring, and other aspects.

The Regional Water Quality Control Boards suggest best management practices (BMPs) for new development and other guidance that should be included in Watershed Management Plans. Financial and technical assistance should be provided to local governments for preparing and implementing policies, plans, programs, and ordinances relative to the Watershed Management Plans.

When: 2008–2018

Cost: \$\$\$

Performance Measure:

Number of comprehensive and integrated Watershed Management Plans that incorporate goals and objectives of the CCMP

Action LU-2.6.1 (New 2007): *In order to use comprehensive Watershed Management Plans for site-specific project planning and implementation, these plans should address regulatory needs and identify appropriate mitigation proposals.*

Who: Local governments and agencies in collaboration with Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, U.S. Environmental Protection Agency, and U.S. Army Corps of Engineers

¹⁸ California Water Code section 79078.

What: Local, state, and federal government agencies often have insufficient capacity to guide effective implementation of regulatory requirements and would benefit from comprehensive Watershed Management Plan elements that could facilitate selection of mitigation projects. These plan elements should include:

A. Watershed-scale features, such as aquatic habitat diversity, habitat connectivity, and other landscape-scale functions;

B. Assessment of watershed conditions. The Clean Water Act §332.3. (a) includes the following:

1. Inventory of historic and existing aquatic resources,
2. Identification of degraded aquatic resources,
3. Chronic environmental problems, such as flooding or poor water quality,
4. Sources of watershed impairment,
5. The presence and habitat needs of sensitive and other wildlife and plant species,
6. Current trends in habitat loss or conversion,
7. Cumulative impacts of past development activities and current development trends,
8. Local watershed goals and priorities,
9. Identification and/or prioritization of aquatic resources that are important for maintaining and restoring ecological functions of the watershed,
10. Requirements of other regulatory and non-regulatory programs that affect the watershed, such as stormwater management or habitat conservation programs,
11. Identification of immediate and long-term aquatic resource functions within watersheds that can be met through permittee-responsible mitigation projects or mitigation banks, including the types and locations of compensatory mitigation activities that would best serve these watershed needs.

C. Assessment of mitigation-specific issues when identifying potential mitigation sites (many of which will also apply to non-regulatory wetlands restoration projects). This assessment of whether to mitigate, and if so, how, should include consideration of:

- Site conditions that favor or hinder the success of mitigation projects, including long-term functionality, hydrologic conditions, and connectivity with other habitat types,
- Compatibility with adjacent land uses and watershed management plans,
- Protection of adequate adjacent transition habitat and buffers,
- Consideration of functions, services, and values (e.g., water quality, flood control, shoreline protection, and non-wetland riparian areas) that will likely need to be addressed at or near the areas impacted by the permitted project.

When: Ongoing

Cost: \$\$\$

Performance Measures:

- 1) Number of comprehensive Watershed Management Plans
- 2) Number of recommended elements per plan

ACTION LU-2.7 (New 2007)

Adopt and implement policies and plans that protect and restore water quality, flood water storage, and other natural functions of stream and wetland systems.

Who: Regional Water Quality Control Boards, State Water Resources Control Board, California Department of Fish and Game, San Francisco Bay Conservation and Development Commission, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, local governments, Natural Resources Conservation Service, and Resource Conservation Districts

What: Policies and plans that provide guidance in protecting and restoring the physical forms of stream and wetland systems (i.e., riparian vegetation, floodplains, stable stream channels) and their natural hydrologic regimes result in improved stream and wetland functions, such as pollutant removal, floodwater storage, and habitat connectivity.

Adopting and implementing the policies and plans will be a coordinated effort among federal, state, and local agencies with jurisdiction over water quality and stream and wetlands system protection. Improved coordination with regard to land use, transportation, and physical infrastructure planning efforts and projects will assist in the protection or restoration of the beneficial functions of stream and wetland systems. These policies will encourage low-impact development and “smart growth,” which protects and restores natural stream and wetlands system functions and avoids the use of impervious surfaces.

Implementation mechanisms will include permit conditions, such as protecting and establishing stream and wetlands system transition and buffer zones (see Wetlands Management Action WT-1.3); strategies to maintain and restore stream and wetlands system functions (see Aquatic Resources Action AR-6.6); financial and regulatory incentives, such as grants and a reduced regulatory burden for “self-mitigating” projects (see Pollution Prevention and Reduction Action PO-4.1); and inclusion of appropriate elements in comprehensive Watershed Management Plans to coordinate the planning and protection of resources (see Action LU-2.6).

When: Development: 2005–2009

Implementation: Ongoing

Cost: Development: \$\$\$

Implementation: \$\$\$\$\$

Performance Measures:

1) Number of updated General Plans, regulatory policies, and other governing requirements that demonstrate stream and wetlands system protection at the local, regional, and state level (via annual survey)

2) Percentage decrease in the permit processing time of compliant projects

3) Net increase in the number of acres of wetlands, floodplains, riparian areas, and streams protected and restored

4) Amount of funding available for implementation of projects/changes in permit procedures that promote protection of water resources

ACTION LU-2.8 (New 2007)

Increase participation, support, and incentives to economically disadvantaged and culturally diverse communities to protect and restore the Estuary and its watersheds.

Who: Regional and local governments, non-governmental organizations, and watershed stewardship organizations

What: Regional and local organizations should implement and incorporate into their business practices state guidance by the Governor's Office of Planning and Research and the California Environmental Protection Agency on environmental justice issues. This should include funding and other mechanisms to increase participation by community-based organizations when targeting restoration, recreation, and pollution reduction and remediation efforts in economically disadvantaged neighborhoods where community members have historically not participated in the planning process. Disadvantaged community groups should be involved and supported in restoration efforts from the inception of a project. These efforts should focus on consensus and coalition-building within the community to foster long-term, sustainable projects that promote environmental health and stewardship (see Action LU-4.3).

When: Immediately

Cost: \$\$

Performance Measures:

1) Percentage increase in number of representatives from community-based organizations in project planning and implementation that come from underrepresented communities

2) Percentage increase in the number of community-supported projects in disadvantaged neighborhoods

3) Amount of funding available to assist participation by organizations from underrepresented communities that would otherwise not be able to participate

Objective LU-3 (Revised 2007)

Promote and support collaborative partnerships in developing and disseminating technical guidance on commonly encountered protection and restoration issues, and implementing local watershed approaches to stewardship and restoration that protect the Estuary and its watersheds.

ACTION LU-3.1 (New 2007)

Promote, encourage, and support collaborative partnerships with broad stakeholder representation, such as watershed councils, in order to develop diverse community-based approaches to long-term stewardship.

Who: Local governments, Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, U.S. Army Corps of Engineers, representatives from other levels of government, universities, and local non-governmental organizations

What: The support of local and regional watershed groups with diverse stakeholder participation and a common vision for the ecological and economic sustainability and livability of their respective watersheds is critical to watershed stewardship and management. State, local, and regional agencies; regional and local planning processes, such as the San Francisco Bay Area Integrated Regional Water Management Plan; and private sector groups, nonprofits, and local community groups should work with existing watershed groups and encourage the formation of additional groups where needed by providing sustainable funding, administrative assistance, and technical expertise and guidance. State grant programs should support these efforts of various partners to participate in local and regional plans and support projects to provide watershed-related input, expertise, and problem solving, and ensure that staffing support for a regional watershed council is made available for communication, coordination, and implementation logistics support.

State, regional, and local agencies should work with local watershed groups to convene discussions and secure input on water and land use policy development and rule-making, general and specific plans, and project development and implementation efforts that affect watershed health. Outcomes of such collaboration should include development of a regionally accepted framework for demonstrating watershed health, adoption of watershed-based regulatory coordination for permitting, creation of a regional watershed forum to pursue regional funding, help with capacity building for local groups, and development of regional goals.

When: 2007 and ongoing

Cost: \$

Performance Measures:

- 1) Establish a regional watershed planning forum to develop diverse community-based approaches to long-term stewardship (including a memorandum of understanding and regular meeting schedule).
- 2) Number and diversity (geography, type, focus/representation) of organizations/agencies participating in watershed planning forum

3) Percentage increase in new local watershed councils or existing councils that expand membership to be more diverse (including state, regional, and local agencies)

4) Amount of funding (preferably renewable) secured for watershed councils and capacity building for community groups

ACTION LU-3.2 (New 2007)

Apply the ecosystem goal-setting approach to watersheds of the Estuary.

Who: U.S. Army Corps of Engineers, California Coastal Conservancy, Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, Bay Area Open Space Council, San Francisco Estuary Institute, San Francisco Bay Joint Venture, water districts, public works departments, cities, counties, and a broad spectrum of public, private, and nonprofit entities

What: Support development and regular refinements of habitat goals reports and integrate with the completed “Baylands Ecosystem Habitat Goals Report” and other plans currently underway (Subtidal Habitat Goals, Upland Habitat Goals, and Stream and Wetland Protection Goals). These plans will result in geographic information systems database and reference documents that can be used as decision-support tools in developing strategies for voluntary, non-regulatory investment in habitat protection, restoration, and management. These strategies will assist public resource agencies, nonprofit conservation organizations, local governments, legislators, private foundations, and landowners seeking to preserve, enhance, and restore the biological diversity of habitats before urban sprawl eliminates remaining opportunities.

In recognition of the fact that it is difficult to assess progress in ecosystem restoration and protection unless broadly agreed-upon targets exist, the three related efforts mentioned above have begun to develop quantifiable goals. Two of these goals processes are focusing on the watersheds surrounding the Estuary, while the third addresses subtidal habitat. The San Francisco Bay Area Upland Habitat Goals Project (Upland Habitat Goals), and a complementary effort to implement stream goals (Stream and Wetland Protection Goals), are coordinated, science-based processes that will use existing data (and develop new data where needed) and include community participation to identify the types, amounts, and distribution of upland habitats, riparian corridors, linkages, compatible land uses, and ecological and physical processes. The intent of goals development and implementation is to sustain diverse and healthy communities of habitat, plant, fish, and wildlife resources, and other ecosystem support functions (e.g., flood attenuation, sediment supply to Estuary margins to mitigate sea level rise) for the nine-county Bay Area and adjacent counties.

Based on broadly agreed-upon goals that are watershed-specific, appropriate indicators related to selected goals can track progress and form the foundation of a comprehensive watershed “health” monitoring system based on state and federal guidance documents (see Action LU-2.4).

When: January 2008–2010

Cost: \$\$\$ (Development)

Performance Measures:

- 1) Number of watersheds that start a goal-setting process with a plan to attract a diversity of stakeholders and to raise secure, renewable funds
- 2) Number of watersheds with clearly articulated and measurable habitat goals

Objective LU-4

Provide educational opportunities for the public and for government institutions as a foundation for protecting and enhancing the resources of the Estuary and its watersheds.

ACTION LU-4.1 (Revised 2007)

Educate the public about how human actions impact the Estuary and its watersheds.

Who: See Public Involvement and Education Program.

What: Develop and distribute educational materials that clearly communicate the interrelationship between human activities, including land use and transportation, and impacts on the ecosystem of the Estuary and its tributary waters.

When: Ongoing

Cost: Development: \$

Effectiveness evaluation: \$\$

Performance Measures:

- 1) Web site created with downloadable education materials
- 2) Number of Web site hits
- 3) Knowledge of interrelationship of humans and the Estuary (via survey)

ACTION LU-4.2 (Revised 2007)

Provide training workshops for local government officials and staff and other key stakeholders to improve land use decision-making that affects the Estuary and its watersheds.

Who: See Public Involvement and Education Program.

What: Develop training materials and present programs for permit analysts, planning commissioners, and other local government decision-makers. Invite participation from other key stakeholders, including landowners, developers, and environmental representatives. Such training should increase participants' awareness of policies, programs, financing mechanisms, and tools that local governments can use to help protect and enhance the Estuary's resources. Local governments, including cities, counties, and special districts, should be provided model ordinances, handbooks, and manuals to integrate natural resources

protection and enhancement into local decision-making, while providing for continued economic development.

When: Ongoing

Cost: \$

Performance Measures:

1) Number and diversity of public officials, management staff, and other stakeholders attending training workshops

2) Number of materials that are actually used/implemented in local government policies/programs (e.g., using a model ordinance to develop a stream setback ordinance or decrease allowable impervious area at new development sites)

ACTION LU-4.3 (New 2007)

Engage with disadvantaged communities in educational programs about the linkages between human behaviors, the environment, public health and safety, and the health of the Estuary and its watersheds.

Who: Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, watershed councils, creek groups, Resource Conservation Districts, nonprofit organizations, community groups, and local governments

What: Encourage two-way communication about environmental issues and stewardship. Educational resources tend to be limited in underserved communities while environmental impacts are often most severe. Disadvantaged communities can become engaged in environmental stewardship by efforts that demonstrate the links between human actions, public health, and the health of the estuarine environment.

Educational programs should be developed for all members of the community, but focused primarily on K-12 students. The students should be provided with opportunities to actively participate in restoration efforts both within their community and throughout the Estuary.

When: Immediately

Cost: \$\$

Performance Measure:

Percentage of elementary school students demonstrating knowledge of link between humans and Estuary health (survey to sample of schools)

Objective LU-5

Develop new public and private economic incentives and funding mechanisms to promote protection and restoration of the Estuary and its watersheds and provide a forum for stakeholders that improves communication and leads to better natural resource management.

ACTION LU-5.1 (Revised 2007)

Create economic incentives that encourage local governments to take action to implement measures to protect and enhance the Estuary and its watersheds.

Who: U.S. Congress, California Legislature, and local governments

What: Make available federal and state funds for local governments to support planning activities and program administration to develop implementing ordinances, to fund capital improvements projects, and to maintain local facilities that protect the resources of the Estuary and its watersheds. Develop innovative incentives, in collaboration with the private sector, for watershed protection and restoration implementation projects, such as tax incentives to reduce impervious surfaces, enhance flood storage, and restore habitat on public and private lands.

When: Ongoing

Cost: \$\$ (Development)

Performance Measures:

- 1) Number of incentives developed and implemented
- 2) Number of disincentives removed
- 3) Amount of funding made available for local governments and other entities to protect the Estuary (e.g., maintaining facilities, engaging in planning efforts)

ACTION LU-5.2 (Revised 2007)

Develop new funding mechanisms to pay for plans, physical improvements, and program administration, management, and monitoring to protect the resources of the Estuary and its watersheds.

Who: California Legislature, League of California Cities, California State Association of Counties, Local Government Commission, Association of Bay Area Governments, local agencies, stakeholders, and non-governmental organizations

What: Utilize existing local funding mechanisms and create new funding mechanisms that support the protection of natural resources in the Estuary and its watersheds, such as benefit assessment districts and stormwater utility fees. For example, fees could be assessed on resources impacted from use of the Estuary, e.g., a storm drain district could assess dischargers into the Estuary an annual fee on a per-cubic-foot basis to fund Estuary improvement projects and plans.

Assist local governments with the development of draft language and legislative relationships that will lead to legislation supporting the implementation of watershed protection and restoration projects at the local level, such as reducing impediments to raising funds or creating new funding opportunities to plan and implement projects. Promote legislation that enhances the ability of local governments to fund watershed protection and restoration

projects, as well as municipal stormwater and nonpoint source program implementation at the local level.

When: 2016

Cost: \$\$, depending on staff resources applied

Performance Measures:

- 1) Number of bills chartered that provide funding and enhance fundraising options for local governments
- 2) Number of special districts formed or other mechanisms established to create new funding
- 3) Dollars raised (per agency or regionwide)

ACTION LU-5.3 (Revised 2007)

Investigate and create market-based incentives that promote active participation by the private sector in cooperative efforts to implement goals for protection and restoration of the Estuary and its watersheds.

Who: California Legislature, Councils of Governments, Regional Water Quality Control Boards, local governments, and stormwater programs

What: Develop market-based incentives, such as density bonuses, fast-track permit processing, or property tax and utility rate reductions, to encourage protection and restoration of the Estuary. For example, these incentives would be available to developers and project sponsors for projects if specific protection measures are implemented that exceed minimum federal, state, regional, and local requirements to protect the Estuary. Incentives should encourage the use of alternative development techniques that contribute to the maintenance and restoration of the natural hydrologic system, including the floodplain.

Provide support for regulatory agencies, local planning and development entities, and the private sector to collaboratively develop desirable incentives that lead to the use of alternative development techniques. Make funds available to implement incentive pilot programs.

When: 2006–2016

Cost: \$\$

Performance Measures:

- 1) Number of new market-based incentives implemented
- 2) Dollars available for collaborative efforts to develop incentives

ACTION LU-5.4 (Revised 2007)

Identify financial barriers to implementing the actions recommended in this Watershed Management and Land Use Program and propose alternative taxation and funding arrangements.

Who: California Legislature, Councils of Governments, and research organizations, such as the Bay Area Economic Forum, the Public Policy Institute of California, and Environmental Defense

What: Create alternative funding arrangements, such as revenue sharing and changes to state law, that allow state, regional, or local agencies to raise the necessary capital for implementing specific land use and watershed management actions. Emphasize fiscal reforms that encourage environmentally sensitive land use.

When: 2006–2016

Cost: \$\$

Performance Measures:

- 1) Increase in new local and state initiatives launched that facilitate funding of watershed management activities
- 2) Dollars raised to fund protection efforts

ACTION LU-5.5 (Revised 2007)

Create a forum to improve communication and resolve disputes regarding land use management among different interest groups that have a stake in the protection and enhancement of the Estuary and its watersheds.

Who: Organizations such as university-based dispute resolution centers and private providers of dispute-resolution services

What: Enable continued dialogue among key interest groups to develop land use policies that will guide Estuary and watershed management. Include groups that have a stake in the protection and enhancement of the Estuary's natural resources, such as government agencies, business, industry, and environmental and other non-governmental organizations. Create a mechanism to arbitrate differences and achieve cross-acceptance between Watershed Management Plans, local General Plans, and regional plans and policies as one alternative to litigation and as means of augmenting the legislative hearing process.

When: 2006–2016

Cost: \$

Performance Measures:

- 1) Effective forum is established and maintained
- 2) Increase in participation of entities that are bringing land use and watershed management issues to the table