

2007

**Guide to Green Redevelopment**

# Coyote Creek Watershed Management Plan



**Prepared by COUNTY of ORANGE**  
Resources and Development Management  
Department (RDMD)  
Watershed and Coastal Resources Division

Prepared by

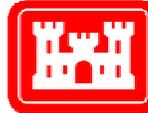
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In Partnership with

United States Army Corps of Engineers,  
Los Angeles District



County of Los Angeles,  
Department of Public Works

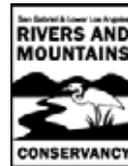


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San Gabriel and Lower Los Angeles Rivers and  
Mountains Conservancy



California State Water Resources Control Board  
/ Santa Ana Regional Water Quality Control  
Board



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The County of Orange (County) would like to thank these funding agencies for their guidance and support during the development of this Plan. In addition, the U.S. Army Corps of Engineers (Corps) cooperated as a partner for the Coyote Creek-Lower San Gabriel River Watershed Feasibility Study along with the County of Los Angeles Department of Public Works, Watershed Management Division. The Corps willingly acknowledged that this watershed management plan would be integrated as a viable component of their Feasibility Study, respecting the vision of local stakeholders. The County is grateful for the ecosystem restoration opportunities the Corps potentially brings to this urbanized watershed.

This Plan was written for everyone, since we all live, work and play in a watershed. For that reason, the preparers are grateful to the hundreds of participants (whose names are listed on the following page) who attended the Coyote Creek Watershed Council meetings, offering suggestions and their vision for this watershed. The County would especially like to thank the following Cities from both Los Angeles and Orange Counties, for hosting Coyote Creek Watershed Council meetings: Anaheim, Brea, Buena Park, Cypress, Fullerton, La Habra (twice), La Mirada and Whittier. It is the hope of the project team that the Cities continue to participate and provide leadership and courage to implement this Plan.

The preparers of this report acknowledge that without the support of the County of Orange, Resources and Development Management Department and the Watershed and Coastal Resources Division, this Plan would not be possible. Addressing land use planning, general plan policies, site design guidelines, park and trail creation and habitat restoration opportunities are generally not within the direct prevue of the Watershed Division, whose primary mission is to improve the water quality of the County's coastal watersheds. However, non-point source pollution is derived from all activities within a watershed, which this Plan attempts to address from a management perspective.

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# Executive Summary

Watershed management is a dynamic field, requiring the integration of many disciplines including public works, land use, water resources, policy, economic development and ecosystem functioning. Asking the question, "What is the root cause of ecological problems in our watershed?" requires examining not only physical functions, but also the social, political and economic functions that dictate what actually happens within a watershed. Land use development and water resource infrastructure development have altered the balance in the hydrologic and ecologic functioning over a long period of time. Restoring ecologic processes to pre-development conditions is not possible, but shifting management practices over time can improve the health of the watershed for future generations.

To help guide this process, an integrated management plan can address the root causes of watershed degradation and shed light on strategies for improving its health. Traditional watershed plans have focused on restoring degraded creeks, rivers and wetlands which produces visible results, but fail to address the root causes of ecological degradation. The historically separate functions of flood control, water supply, water quality, open space stewardship, recreation, land use and economic development were also addressed to some degree in these plans. The most difficult aspect of watershed management to quantify and address is the countless daily activities of individual property owners and agencies. Recent watershed management planning efforts have attempted to address this difficult aspect of watershed management. Understanding the cumulative impacts of piecemeal resource management is critical to long-term improvements of the watershed.

Back in 2000, the County of Orange formed the Watershed & Coastal Resources Division to address the increasingly regulated water quality problems in a holistic way. That same year, the newly formed Watershed Management Division of the County of Los Angeles Department of Public Works (LADPW) began their conversion to integrating traditionally separate public works functions. Watershed managers began to realize that resolving problems in complex urbanized areas would require a comprehensive Plan that would systematically identify opportunities and constraints for prioritizing and coordinating activities. To address the need for a management Plan for the Coyote Creek Watershed, the County pursued grant funding.

In addition to state grant funding, a partnership with the U.S. Army Corps of Engineers was formed to identify and study the feasibility of implementing a large-scale ecosystem restoration project for the watershed. Flood protection and aquatic ecosystem restoration are still critical elements of traditional responsibilities of watershed managers. To investigate opportunities for restoring ecosystem degradation, the County of Orange partnered with the U.S. Army Corps of Engineers in 2003 to develop the Coyote Creek-Lower San Gabriel River Watershed Feasibility Study. Additional project partners include LADPW, the State Water Resources Control Board/Santa Ana Regional Water Quality Control Board, the State San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy and the State Coastal Conservancy.

The Coyote Creek Watershed Management Plan (Plan) provides a blueprint for improving the health of the watershed through multi-objective projects, policies and site design guidelines. This report is a user guide on how to improve the management of the watershed, rather than focusing on the ecological problems that have resulted from piecemeal management of land and water resources. Although written by the County of Orange, this Plan was not written through a single lens. Rather, it takes a more systematic approach by considering total watershed functioning for maximum social, economic and environmental benefit. All stakeholders are considered. By acknowledging roles each stakeholder can play, any individual or organization can participate in achieving the vision for this watershed.

The cumulative benefits of implementing these strategies throughout the watershed will result in a 'green infrastructure' which, over time, will achieve the Plan vision of "Thriving communities living sustainably within a healthy Coyote Creek Watershed." The Plan offers a different approach to land and water management, one that is more responsive to watershed and ecosystem "boundaries" rather than political jurisdictions or landownership boundaries.

By developing in the same way (or "do nothing different" alternative), water quality could further decline resulting in increased sickness and loss of aquatic and oceanic habitat, imported water shortages would mean thirsty landscapes would not be irrigated to ensure indoor water use continues, native plant and animal species could become extinct, and entire generations of children could go without any interaction with nature resulting in a future stewardship shortage. This watershed management plan addresses the question, "What is the true cost of maintaining the status quo?"

Implementation of the Plan will enhance aquatic and terrestrial habitat, improve water quality, enhance local water supplies, increase recreation and open space opportunities, reduce sediment and erosion and aid in flood protection. Projects and site design guidelines offer strategies for converting the existing stormwater infrastructure to a water conservation infrastructure. General plan policies provide low impact development and resource management strategies, addressing the gap between land use and water quality/supply. This report encourages public-private collaboration on projects to achieve mutual goals and maximize benefits.

The Plan is a living document that begins the process of transitioning the way urban landscapes are developed and stormwater is managed to a more flexible and proactive regionally-based management approach. This Plan has no enforcement "teeth." Rather, it is a call to (voluntary) action by public agencies, developers, and even individual homeowners to do things differently in the future, for the health and benefit of future generations.

# Coyote Creek Watershed Management Plan

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# Chapter 1

## Introduction

The Coyote Creek Watershed is a nearly built-out region, including some of the highest population densities in California. A dense network of freeways, buildings and urban infrastructure supports the area's roughly 1 million residents, replacing historically sponge-like open spaces and broad floodplains with impervious land uses. Industrial rooftops, freeways, wide residential streets and empty parking lots coat the watershed. These impervious surfaces raise temperatures as much as ten degrees higher than in vegetated areas, create higher volumes of stormwater runoff, cause pollutants to wash directly into waterways rather than filter through plants and earth, and increase airborne contaminants from industrial and technological processes, especially from motorized vehicles (Cal Poly 606).

Piecemeal land use decisions cannot be sustained any longer if the watershed is to regain healthy ecosystematic functioning. A new approach to watershed management is needed, one that is holistic, addressing not only projects, but new policies and partnerships working in an integrated fashion. Such an effort requires a regional strategic plan, one that addresses multiple management activities at the same time, to ultimately improve the health of the watershed. This document is an attempt at providing a strategic plan for improving the health of the watershed and the communities it supports. As a sub-watershed to the San Gabriel River Watershed, efforts in the Coyote Creek Watershed need to be coordinated on a regional scale.

In 2000, the County obtained three state grants to support the development of Coyote Creek Watershed Management Plan (Plan). The California State Coastal Conservancy provided \$130,000 in Proposition 40 bond funds. The San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy provided \$100,000 in grant funds also from Proposition 40, which was later increased to \$150,000. The State Water Resources Control Board awarded the County \$200,000 in Proposition 13 grant funds which were administered through the Santa Ana Regional Water Quality Control Board (Region 8). The U.S. Army Corps of Engineers (Corps) and the County of Los Angeles Department of Public Works (LADPW) were partners in the development of both this watershed

management plan as well as the Coyote Creek-Lower San Gabriel River Watershed Feasibility Study (Study). This Plan will be a component of the Corps Study.

## a. Purpose of the Plan

Watershed management plans come in many shapes and sizes. It is important to know is that this Plan is not a regulatory document nor does it dictate local land uses. However, this Plan does provide a framework for improving watershed management practices for the region. It is also a User Guide for green redevelopment. It provides planners, developers and residents with tools to transform their communities through attractive streetscapes, parks and greenways. No project will be constructed directly from this Plan. Instead, it is the intent of this Plan to influence all future projects to incorporate watershed-friendly designs.

Strategies include shifting public works and developers from a traditional stormwater infrastructure to a water conservation or green infrastructure. This Plan encourages inter-jurisdictional projects and planning to promote open lines of communication, cooperation and collaboration between agencies for improved management of shared resources. Implementation of the Plan also encourages stakeholder participation in the planning process, providing a layer of accountability in the governance in their communities. The result will be the increased capacity of citizens to understand and be involved in the future of their watershed.

### Who Benefits?

- Residents will benefit from clean water, clean air, attractive communities, access to open space, recreational opportunities
- Project proponents will have improved access to funding for projects
- Regulated entities can achieve compliance with water quality regulations
- Communities become more attractive, drawing residents and businesses
- Biodiversity is increased, stabilizing native plant and wildlife populations for generations to come
- Increase water supply and improve quality of water resources

## b. Key Plan Strategies

The following recommendations are derived from stakeholders and the project team. These represent key strategies that provide the best opportunities for achieving the vision for a healthy Coyote Creek Watershed as set forth in this document. A more comprehensive and detailed list of recommendations can be located in Chapter 4 – Key Implementation Strategies.

Key policy recommendations for City/County planning departments:

- Integration of watershed-based policies into future updates to local general plans, specific plans and zoning ordinances

- Inclusion of a Water Element into future general plan updates
- Adoption of the Green Infrastructure Site Design Guidelines contained herein into local building codes

Key project opportunities for municipal water quality/stormwater managers:

- Investigate feasibility of the 'Confluence to Coast' project with regional stormwater retention capabilities connected to Los Cerritos Wetlands restoration
- Assess feasibility of wet weather retention/groundwater recharge basins as identified in the Plan
- Finalize Natural Treatment System (NTS) design building off the Wetland Treatment Opportunities as identified in the Plan
- Adoption and implementation of 'Green Streets' Guidelines for all new and redevelopment projects as part of treatment train

Key recommendations for public works managers:

- Conversion of roads and stormwater infrastructure over time to a water conservation infrastructure with water harvesting, filtration and recharge capabilities

Key habitat protection and restoration opportunities for public-private partners:

- Restoration of Los Cerritos Wetlands
- Protection of Tonner Canyon habitat linkage under the 57 freeway in perpetuity
- Continued public participation on early stages of planning and conceptual design process for proposed development projects in the Puente-Chino Hills and Coyote Hills
- Feasibility Study for open space protection and management alternatives of the Puente-Chino and Coyote Hills including:
- Restore urban creeks through daylighting underground stormdrains, concrete removal and floodplain restoration where feasible and planting native species

Key project design recommendations for developers of new and redevelopment projects:

- Utilize green infrastructure site design guidelines
- Consider LEEDS, Ahwahnee Principles, alternative energy and other 'green' design guidelines
- Include high density, transit-oriented design, public transportation, greenways, and jobs for local residents
- Capitalize on carbon and pollutant trading programs while reducing overall

Key management structure recommendations for all:

- Continue the Coyote Creek Watershed Council under the leadership of either Orange or Los Angeles County staff
- To ensure executive-level agency oversight alternative for County of Orange, consider a partnership with the San Gabriel River Watershed

Conservation Authority (WCA) Joint Powers Authority as a signatory or develop a Memorandum of Agreement with WCA specifically for the Coyote Creek Watershed

- Establish a non-profit stewardship entity, or a Coyote Creek Watershed program within an existing organization such as the Los Angeles and San Gabriel Rivers Watershed Council

### c. User’s Guide

This Plan focuses on three key watershed management activities: municipal planning, public works and redevelopment. The following table is a quick access reference guide to assist users in quickly identifying and locating useful tools available within the Plan. These tools are strategies for implementing the Vision and Goals of the Plan. Although the Plan focuses in on these users, all stakeholders are encouraged to champion their priority projects – Don’t wait for the wheels of government to catch up.

#### Quick Reference Guide

User	Strategy	Tools	Ref.
- City Planning - Public Works	Long-range Planning	Regional Maps for Planning future infrastructure improvements	Ch 4, D,E,H,J
	Implementation	List of Priority Projects	Ch 4; E,H
		GI Site Design Guidelines Fact Sheets	G
	Mitigation Opportunities	Habitat Restoration Master Plan	H
		Habitat Protection Maps	Ch 4; E, H, J
	Funding Opportunities	Projects meet IRWMP criteria	
		Prop 50/84, local measures	
	Collaborative Management	Cost-share agreements to fund implementation, O&M	
	General Plan Guidelines	General Plan Land Use Policies	Ch 4; F
		Regional Maps for re-zoning	Ch 4, D,E,H, J
		List of Priority Projects	Ch 4; H
	Site-Scale Guidelines	GI Site Design Guidelines Fact Sheets	G
Update ordinances & codes		Ch 4; F	
Developers (Public/Private)	Green Redevelopment	GI Site Design Guidelines Fact Sheets	G
		Green Principles	J, K
		Case studies	J, K
	Marketing	Green Principles	J, K
		LEED Certification	K
	Mitigation Opportunities	Habitat Restoration Master Plan	H
		Habitat Protection Maps	Ch 4; E, H, J
	Implementation Guidelines	Project Templates	G, H, J
		Design Guidelines	G, H, J, K
	Implementation Opportunities	Part of a Regional Plan	
		Partnership opportunities with local government & NGO’s	

# Chapter 2

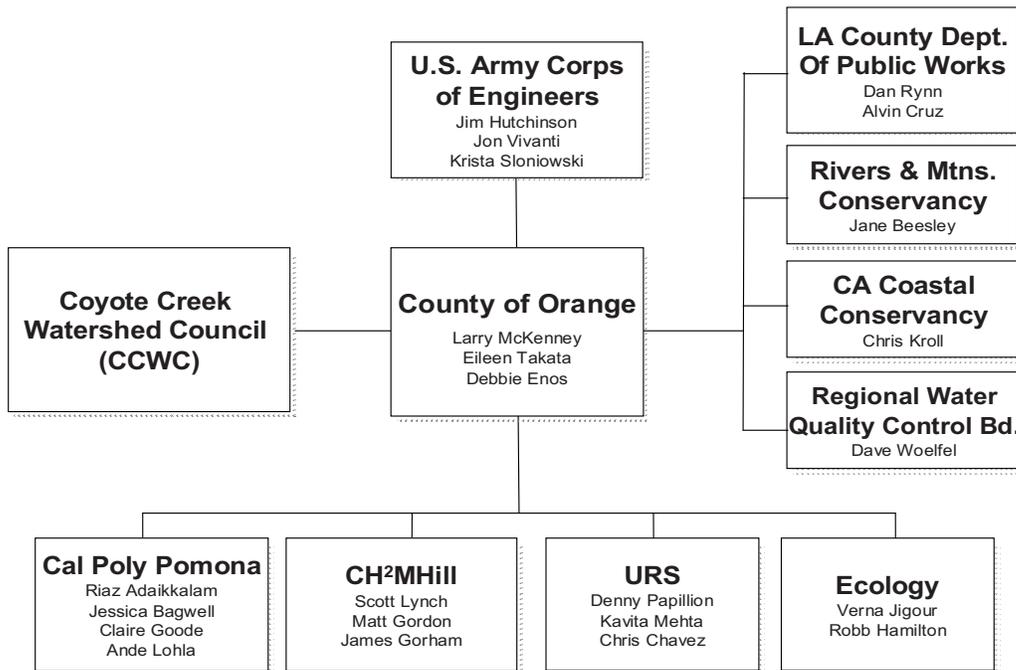
## Plan Development

A diverse range of expertise and knowledge was needed to develop this complex watershed management plan. Watershed issues of water quality, stormwater, hydrology, habitat, recreation, land use and water supply all had to be addressed simultaneously and integrated into one plan that reached across twenty-two cities and three counties. To develop this complex plan, a project team with diverse capabilities was assembled. In addition to understanding physical attributes of the watershed, intangible aspects of watershed management including socio-economic health, aesthetics and environmental justice were explored. Stakeholder roles in watershed management, policies that govern land and water use, and regional coordination mechanisms were also researched and evaluated by the team.

To be successful this Plan requires voluntary implementation by willing stakeholders. For this reason, the stakeholder process played a central role in its development. The Coyote Creek Watershed Council (Council) became the primary forum for reporting progress and receiving input on elements of the plan. The Council also provided an opportunity for stakeholders to hear about and provide input on current efforts in the watershed. Development of technical memorandums and other products were presented at each Council meeting. The Plan was strengthened by these valuable interactions with the stakeholders.

### a. Project Team

The County of Orange (County) was the lead agency for Plan development and facilitator of the stakeholder process. The U.S. Army Corps of Engineers (Corps), as a project partner, played a role as a project team member. Three state funding agencies including the Santa Ana Regional Water Quality Control Board, State Coastal Conservancy and the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) also participated on the project team. County of Los Angeles County Department of Public Works (LADPW), CH2M HILL (CH2), URS Corporation (URS) and Verna Jigour & Associates (VJA) rounded out the team. Each entity played a role in the development of the Plan, but the final product is the responsibility of the County of Orange.



Project Team members' roles and responsibilities included the following:

- *County of Orange* – project lead and management; Coyote Creek Watershed Council facilitator; cost-share partner with the Corps Feasibility Study (see below)
- *U.S. Army Corps of Engineers* – cost-share partner with the County for the Coyote Creek-Lower San Gabriel River Watershed Feasibility Study
- *County of Los Angeles, Department of Public Works, Watershed Management Division* – cost-share partner with the County on the Corps Feasibility Study
- *State Water Resources Control Board/Santa Ana Regional Water Quality Control Board* – funding partner
- *San Gabriel and Lower Los Angeles Rivers & Mountains Conservancy* – funding partner, habitat technical review
- *California Coastal Conservancy* – funding partner
- *CH2M HILL* – GIS data compilation and spatial analysis of opportunities, existing conditions summary
- *URS Corporation* – existing watershed management agency overview; General plan policy review, analysis and recommendations; plan evaluation
- *Verna Jigour & Associates* – Habitat Restoration Master Plan and Focal Species Assessment
- *606 Studio, Landscape Architecture Graduate Program, California State Polytechnic University, Pomona* – Green infrastructure design and planning recommendations

## b. Coyote Creek Watershed Council

The Coyote Creek Watershed Council was formed by the County to provide a forum for watershed stakeholder participation during the development of the watershed management plan. Meetings were coordinated and facilitated by the County. The public meetings were open to any interested stakeholder - individuals, organizations or agencies. The primary purpose of the Council was to give stakeholders a voice in the future of the watershed.

Accountability of public agency and private developer actions is taking place more and more through these watershed stakeholder processes. The public expects a certain level of transparency with land use decisions that may impact them and that their participation in planning efforts matters. Too often, unseen processes and decisions have taken place without their knowledge and support. As such, the Council provided an opportunity for stakeholders to have a voice in planning the future of their communities.

The trend to reveal the decision-making processes nearby, but not in the Coyote Creek Watershed, is exemplified by the following efforts:

- LADPW facilitated the Steering Committee for the San Gabriel River Corridor Master Plan, which resulted in an integrated vision for the entire 39-mile corridor which overlaps with the Coyote Creek Watershed, but did not venture far enough to the east.
- San Gabriel Mountains Regional Conservancy was in the process of completing an Upper San Gabriel River Watershed Management Plan just to the north of the Coyote Creek Watershed.
- Santa Ana River Watershed has numerous on-going efforts just beyond this watershed
- Westminster Watershed Feasibility Study, adjacent to the study site, also provided regional stakeholder opportunities, but none specifically for this area.
- Stakeholder groups focusing on regional stormwater permit and technical water quality issues for the San Gabriel River Watershed have been meeting regularly, but did not necessarily embrace broad-based policy and management issues or issues specific to Coyote Creek and tributaries
- The Rivers and Mountains Conservancy supported the Green Visions planning effort by USC Center for Sustainable Development

The Council provided opportunities for individuals to provide feedback on the Plan as it was being developed. In addition, a speaker's series called "Who's Who in Watershed Management" provided stakeholders an opportunity to learn about other regional projects of potential interest to them. The meetings also served as a forum for open discussion regarding issues of concern within the watershed. The most critical of which involved proposed development projects in the Puente-Chino Hills and West Coyote Hills. The meetings, facilitated by the County, were intended to be a neutral setting for discussion of potentially contentious issues concerning the future of the watershed. While it is the intent of this Plan to be inclusive of the range of proposed activities from new development to habitat restoration, projects that are regionally focused, and generally protect or enhance long-term health of watershed resources will tend to be

highlighted. However, acknowledging that new communities are in the planning and design stages, this Plan advocates for green infrastructure designs for the least impact on the watershed.

The County invited over 100 organizations, local municipalities, regional, state and federal agencies and individuals to participate in Council meetings. Approximately 300 individual contacts from these entities were notified regularly of upcoming meetings and announcements. The following list represents the entities that were included on the electronic distribution list. Not all organizations below participated in Council meetings. The 200 largest landowners were also notified by mail when the project began in early 2005. Interested local citizens were also in attendance, but their names are not included on this list.

## Coyote Creek Watershed Council Organizations

60th AD Republican Central Committee	City of Whittier
AEI-CASC Engineering	County of Los Angeles, Department of Public Works, Watershed Management Division
Aera Energy- Fee Lands	County of Orange, 2 <sup>nd</sup> District Supervisor
Audubon Society, El Dorado	Jim Silva
Berryman & Heniger	County of Orange, 4 <sup>th</sup> District Supervisor
BonTerra Consulting	Chris Norby
Brown & Caldwell	County of Orange, Dana Point Harbor Department
Burke, Williams & Sorensen, LLP	County of Orange, RDMD, Harbors, Beaches & Parks
California Assembly member Bob Huff	County of Orange, RDMD, Public Works, Flood Programs
California Watershed Network	County of Orange, RDMD, Watershed & Coastal Resources
Central Basin Municipal Water District	County of Orange, Resources & Development Management Department (RDMD), Planning & Development Services
CH2M HILL	Earth Resources Foundation
City of Anaheim	Equestrian Coalition of Orange County
City of Artesia	Everest International Consultants, Inc.
City of Brea	Forest Lawn Memorial Parks
City of Buena Park	Friends of Coyote Hills
City of Cerritos	Friends of Harbors, Beaches & Parks
City of Chino Hills	Friends of San Gabriel River
City of Cypress	Hills for Everyone
City of Diamond Bar	Irvine Ranch Water District
City Of Fullerton	Jones & Mayer
City of Hawaiian Gardens	La Habra Vital Community Task Force
City of Industry	Laer Pearce & Associates
City of La Habra	Latino Health Access
City of La Habra Children's Museum	Law Office of Richard D. Jones
City of La Habra Heights	Legacy Collaborative
City of La Mirada	Long Beach Water District
City Of La Palma	Los Angeles & San Gabriel Rivers Watershed Council
City of Lakewood	
City of Long Beach	
City of Long Beach Water District	
City of Los Alamitos	
City of Norwalk	
City of Placentia	
City of Santa Fe Springs	
City of Seal Beach	
City of Seal Beach W.S.A.	

Los Angeles County Bicycle Coalition  
Los Angeles County Sanitation District  
Metropolitan Transportation Authority  
Metropolitan Water District of Southern  
California  
Montgomery Watson Harza Americas, Inc.  
Moore Iacofano Goltsman, Inc.  
National Park Service, Rivers, Trails &  
Conservation Assistance Program  
(RTCA)  
Orange County Coastkeeper  
Orange County Council of Governments  
(OCCOG)  
Orange County Sanitation District  
Orange County Vector Control District  
Pacific Coast Homes  
Puente Hills Landfill Habitat Restoration  
Authority  
Recreation Equipment, Inc.  
Recupero and Associates, Inc.  
Regional Water Quality Control Board, Los  
Angeles, Region 4 (RWQCB)  
Regional Water Quality Control Board, Santa  
Ana, Region 8 (RWQCB)  
Resident of Newport Beach  
Robert A. Hamilton, Consulting Biologist  
San Gabriel & Lower Los Angeles Rivers And  
Mountains Conservancy (RMC)  
Santa Ana Watershed Project Authority  
(SAWPA)  
Sea and Sage Audobon Society  
Sierra Club, Puente-Chino Hills Task Force  
South Coast Wildlands Project  
Southern California Coastal Waters Project  
(SCCWRP)  
Southern California Watershed Alliance  
Southern California Wetlands Recovery  
Project (SCWRP)  
Surfrider Foundation, Seal Beach-Huntington  
Beach Chapter  
Trails4All  
U.S. Congressman Dana Rohrabacher  
U.S. Congressman Gary Miller  
U.S. Congressman Linda T. Sanchez  
U.S. Congressman Loretta Sanchez  
URS Corporation  
US Army Corps of Engineers – Planning  
Branch  
US Army Corps of Engineers -Regulatory  
Branch  
Verna Jigour & Associates, Conservation  
Ecology  
Walnut Valley Water District, Diamond Bar

Watershed Planning Services  
Wildlife Corridor Conservation Authority  
(WCCA)  
Withers & Sandgren Landscape Architects  
Yorba Linda Water District

## Coyote Creek Watershed Council Meetings

Nine meetings of the Council were held between May 2005 and November 2006, approximately every other month. Each meeting was hosted by a participating City within the Watershed. The meetings were 2.5 to 3 hours in length. An average of 35 stakeholders attended each meeting which represents over 900 hours of time invested by stakeholders thus far in the development of this watershed plan. For meeting agenda's, notes and electronic slide presentations, see Appendix A.

The following summary of the nine Council meetings includes dates, locations, local host, Who's Who in watershed management stakeholder presentations and key topics of discussion.

Meeting 1: May 11, 2005 – Brea Civic Center, City of Brea

- Watershed 101- Introduction to planning process and project overview.
- Input on stakeholder issues of concern

Meeting 2: July 14, 2005 – Fullerton City Hall, City of Fullerton

- Corps and County planning process
- Summary of issues and discussion
- Overview of Existing Conditions and discussion

Meeting 3: September 8, 2005 – Anaheim Downtown Community Center, City of Anaheim

- San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy – Jane Beesley, Contract Manager
- Puente Hills Landfill Native Habitat Preservation Authority – Andrea Gullo, Executive Director
- Plan Goals and Objectives
- Summary of Existing Conditions and Who's Who in Watershed Management
- Call for project opportunities

Meeting 4: November 10, 2005 – Whittier City Hall, City of Whittier

- San Gabriel River Corridor Master Plan – Alvin Cruz and Daniel Bodadilla, LA County Department of Public Works
- Aera Energy Puente Hills Project – Jeff Maisch, Project Manager
- Updated Goals and Objectives list, stakeholder prioritization
- Who's Who Technical Memo review, plans and policies overview
- Opportunities and Constraints Technical Memo review
- Summary of issues and spatial analysis process

Meeting 5: February 9, 2006, La Mirada City Hall, City of La Mirada

- Greater Los Angeles Region Integrated Water Management Plan – Hector Bordas LA County Department of Public Works and Belinda Faustinos, Rivers & Mountains Conservancy
- Orange County's Drainage Area Management Plan 2004-2005 Performance Effectiveness Assessment and North County Dry Weather Monitoring Program – Richard Boon, County of Orange
- 606 Studio Green Redevelopment Thesis – Jessica Bagwell, Cal Poly Pomona, Graduate Landscape Architecture Program
- Distribute Existing Conditions and Who's Who Technical Memos
- Review Draft Plan Outline
- Provide Opportunities and Constraints Technical Memo update
- 5P's Workshop – map projects, brainstorm programs, plans, policies and partnerships

Meeting 6: April 13, 2006, Veteran's Hall, City of La Habra

- West Coyote Hills: A Park and Nature Preserve for Now and the Future – Angela Lindstrom, Friends of Coyote Hills
- Coyote Creek Watershed and West Coyote Hills: Coordination of Development with Natural Resource Protection, Jim Pugliese, Chevron Land and Development
- 606 Studio Green Redevelopment Thesis Project Update – Claire Goode, Cal Poly Pomona, Graduate Landscape Architecture Program
- Review high potential multi-objective project areas, policy recommendations
- Management framework overview
- Group Feedback – 5P's wish-list discussion

Meeting 7: August 10, 2006, Cypress Community Center, City of Cypress

- Los Cerritos Wetlands Restoration Vision – Don May, California Earth Corps
- Coyote Creek Improvements Park, City of Los Alamitos – Jan Sandgren, Withers and Sandgren
- El Dorado Regional Park Wetlands Feasibility Study – Anna Mendiola, City of Long Beach
- Confluence to Coast Regional BMP / Ecosystem Restoration project
- Green Infrastructure overview
- Recap key issues and opportunities
- Overview of Management Framework Technical Memo

Meeting 8: October 18, 2006 La Habra Community Center, City of La Habra

- "Seeing Green: Grounds for a Renewed Urban Infrastructure" 606 Studio, Cal Poly Pomona Thesis Report – Claire Goode, EPT Design
- Los Angeles Integrated Regional Water Management Plan (IRWMP) Update – Krista Sloniowski, Brown & Caldwell
- Habitat Restoration Master Plan overview, Verna Jigour, Verna Jigour & Associates
- Priority Project Opportunities – James Gorham, CH2M HILL
- Green Infrastructure Project Templates
- Watershed Management Plan outline and overview
- Project Opportunities breakout group exercise – prioritize and criteria building

Meeting 9: November 30, 2006, Brea City Hall, City of Brea

- Sustainable Travelways – "Green Streets" Policies for El Toro's Great Park/Heritage Fields Projects, Pat Fuscoe, Fuscoe Engineering
- Walkthrough overview of Watershed Management Plan
- Review general plan policy recommendations
- Present plan and no plan analysis
- Present overview of Green Infrastructure Site Design Guidelines
- Project Opportunities overview
- Group discussion on implementation challenges

The publication of this watershed management plan completes this stage of the participatory process. At the time of publication the future role of the Council had yet to be determined. It is the hope of the project team that the Council continues to be a forum for positive change beyond the finalization of this stage of the Plan and Corps Feasibility Study. The Corps Study process will continue well into 2007, as long as federal funding remains available, providing the Council a tangible reason to continue to meet. Beyond the Feasibility Study, implementation of this watershed plan will require leadership and accountability. It is not clear

at the time of publication whether the County will provide a leadership role beyond the Corps study.

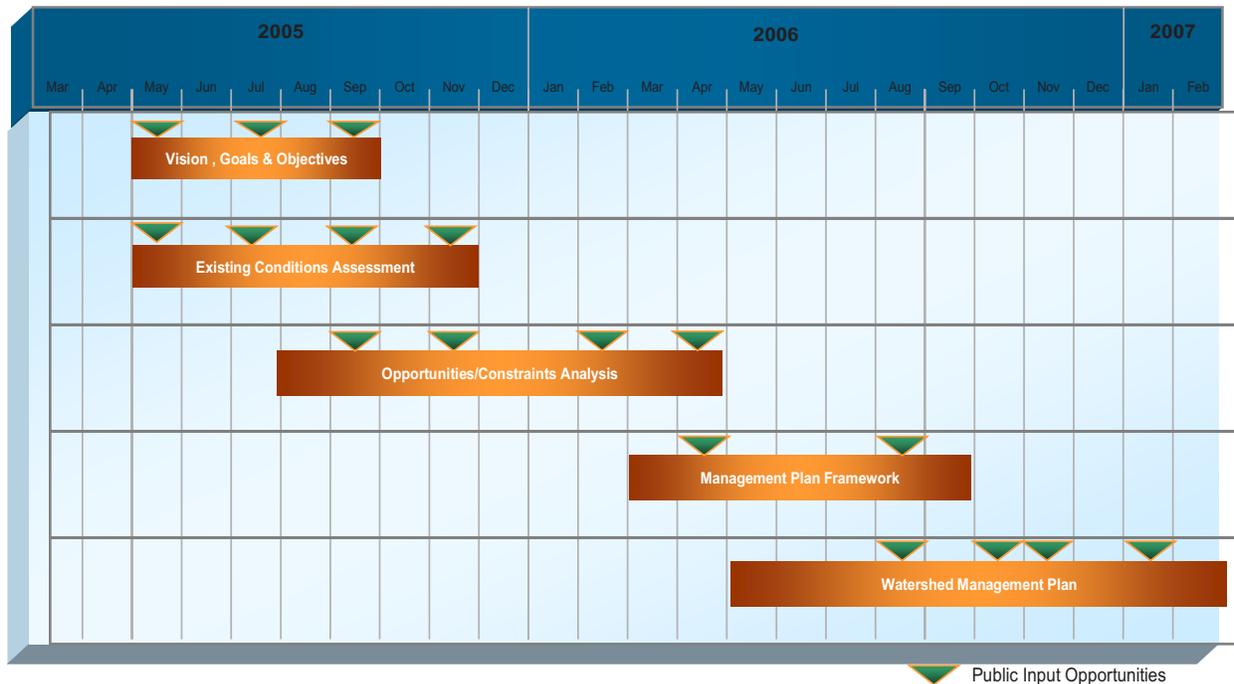
No matter which entity provides Council leadership, one of the key management strategies from this Plan is the creation of a permanent Coyote Creek Watershed Management Council. Without a stakeholder process in place, accountability of plan implementation and cohesive watershed management will be lost. Government and private interests will continue to operate independently of each other without a regional perspective or checks and balance system in place. This could result in the further loss of watershed functions and erosion of opportunities to protect and strengthen human and wildlife communities. Ultimately it is up to the stakeholders themselves to decide what role they desire to play in the future of the watershed and in the realization of their vision for their own communities.

### c. Plan Development Process

This watershed management plan represents the integration of some of the best strategies for improved watershed health and integrated management. Research, input and analysis from the project team provided the core components of the plan, but all based on stakeholder input. Their comments added further refinements along the way. Outside resources from established sources were reviewed and integrated including several that have been added at the end of the report as reference resources.

The essence of this Plan includes recommendations for future policies, projects, site design guidelines and management opportunities for voluntary adoption and implementation. Implementation of plan elements throughout the watershed will bring the greatest and most lasting benefits. In addition to the opportunities afforded by the recommendations included herein, are those associated with known capital projects and other programs that are not specifically referred to within this Plan. These projects, as well, have the potential if they are implemented in a manner consistent with the goals, objectives and policies contained within this document to change the course of the watershed. The incorporation of these types of capital project opportunities into the Plan is a goal for future incarnations of the report.

The complex process of developing the Plan has been summarized in the diagram below into five major phases: Vision, Goals and Objectives, Existing Conditions Assessment, Opportunities and Constraints Analysis, Management Framework and Watershed Management Plan.



### Phase 1: Vision, Goals and Objectives

As with every plan, the first step is to brainstorm issues, then develop the framework or roadmap. Early in the process, the project team and stakeholders provided input on issues of concern throughout the watershed. The success of this Plan lies in its ability to adequately address those issues that matter most to stakeholders coupled with their willingness to take action. Strategic plan framework elements including the vision, mission, goals and objectives were initially drafted by the project team, but were refined and ultimately agreed upon by the stakeholders over three Council meetings. Chapter 3 provides more detail on the framework which forms the foundation of all recommendations contained within this document.

In April 2005, project consultants were brought on board to develop the technical analysis needed to prepare this report. On May 4, 2005, a Project Team Visioning workshop was held to jump-start the process. Participants in this intensive workshop included a diverse and broad cross section of County and Corps staff with expertise in hydrology, recreation, open space, planning, design and ecology. A draft strategic plan framework was crafted during this visioning meeting, including a initial draft set of issues, vision and mission statements, goals and objectives. This first draft of the framework was presented to the Council for input and refinements continuing throughout 2005. The final version of the strategic plan framework was agreed upon in November 2005. (See Chapter 3)

### Phase 2: Existing Conditions Assessment

This is the data collection phase of the plan. Two technical memorandums (TM) summarize both current physiographic conditions of the watershed as well as management operations

within the watershed. The data presented in these TMs provide the baseline condition of the watershed for ecosystem functioning and management. This information provided the take-off point to explore opportunities and identify constraints for the improvement of watershed health.

The Existing Condition's Summary Data TM was developed by CH2 (See Appendix B). This report provides an overview of data related to land use, climate, air resources, geology, water resources, water quality, biologic resources, historic and cultural resources. Information that allows for spatial interpretation was presented in Geographic Information System (GIS) map form.

In the Who's Who report, URS examined the many roles of various agencies and organizations in the watershed (See Appendix C). For example, key roles by watershed managers include regulatory, resource management, planning, maintenance, development, capital improvements, monitoring, and restoration. With multiple players managing the watershed, it is essential to understand who they are, their roles and the tools they use to regulate and manage watershed resources. Typical management tools used by the agencies outlined include policy and planning documents.

### Phase 3: Opportunities and Constraints Analysis

In this joint report by CH2 and URS, opportunities for restoring watershed health were explored and analyzed (See Appendix D). The team began this phase by assessing through GIS spatial analysis those issues of concern identified by the project team and refined by the council. The power of GIS is that it can locate those watershed issues on a map that may not be visible or apparent. For example, the extent of impervious surfaces or gaps in park and open space coverage becomes more tangible and clear when depicted in map form, rather than in text or tabular form. "Soft" factors such as policies, programs and plans can also be identified visually through spatial mapping. These opportunity areas for both physical projects and management changes serve as the primary basis for recommended management strategies in the following Chapters.

During this same time period, a team of four Landscape Architecture graduate students from California State Polytechnic University, Pomona, developed their thesis project, entitled "Seeing Green: Grounds for a Renewed Urban Infrastructure" (See Appendix J). Their work complements and enhances this watershed plan through their thoughtful and insightful analysis of watershed issues and creative solutions for a healthier watershed through the use of green infrastructure and policy modifications. Their analysis went beyond typical watershed assessments and examined quality of life issues such as commuter times, obesity and asthma rates in children. Their report reveals a glimpse of how we can transform our older urban infrastructure to perform valuable watershed functions and at the same time enhance the livability of any community.

### Phase 4: Management Framework

It is during this phase that the bulk of the key recommendations for projects, plans, programs, policies and management strategies were developed resulting in the following three (3) Technical Memos:

1. **Potential Project Opportunities TM**

Stakeholder project ideas are integrated with GIS-derived projects for a well-rounded selection of opportunities. The spatially derived opportunity maps from

the previous phase underwent further analysis to identify priority “hot spots” project opportunities for habitat preservation, treatment wetlands, passive parks, infiltration/retention basins, interpretive/watershed connectivity and riparian enhancement. In total, 70 high value areas were identified in the Opportunities and Constraints TM (See Appendix D). Several areas contained clusters of project sites with the remainder generally distributed throughout the watershed.

## 2. Recommended General Plan Strategies TM

Watershed-friendly policies are provided in the Recommended General Plan Strategies TM (See Appendix F). They are ready for adoption and organized by general plan elements for ease of use. The policies include existing adopted general plan policies from watershed cities as well as additional input derived from stakeholders, the project team and nationally recognized Ahwanhee principles. See Appendix K for more details on the Ahwanhee Principles.

## 3. Habitat Restoration Master Plan

Conservation ecology consultant Verna Jigour along with local ornithologist and consulting biologist Robert A. Hamilton provided habitat restoration guidelines for the urbanized watershed. They developed a planning level assessment of habitat restoration opportunities, specific restoration goals and objectives, and an assessment of focal species that can be used as targets for restoration design within the watershed. The focus was primarily on urbanized portions of the watershed, but expanded to address the Puente-Chino Hills, Coyote Hills and Los Cerritos Wetlands restoration opportunities. (See Appendix H)

## Phase 5: Watershed Management Plan

In this final phase, all of the key recommendations from the stakeholders and project team have been compiled and integrated to form the final watershed management plan document. Gaps in analysis were filled in order to address important strategies for watershed restoration. The results are summarized in Chapter 4 – Key Implementation Strategies and Chapter 5 – Conclusion. The Key Implementation Strategies in Chapter 4 consist of specific action items to improve watershed health. Strategies include over 50 general plan policies, approximately 130 projects, plans and programs, eight green infrastructure site design guidelines and management recommendations. The actual Site Design Guidelines Fact Sheets have been included as a reference in Appendix G.

In Chapter 5, the Plan was evaluated from two different perspectives, to either to not implement or to fully implement the recommendations from this document. The question was asked, what would happen if status quo was to remain and nothing was done differently? The Plan– No Plan Analysis Matrix provides a snapshot of the benefits of plan implementation and the impacts of no plan implementation and maintaining the status quo. The intent of this qualitative evaluation is to ensure that stakeholder issues and objectives had been addressed in the report and that desired benefits through plan implementation would be achieved. And how would success be measured if the Plan were fully implemented? Next steps and a conclusion wrap up the report.

To encourage further investigation into green infrastructure concepts, several resources are included in the Appendices section of the report. The Site Design Guidelines Fact Sheets are readily applicable to any redevelopment project. These eight templates offer real world

examples of how to effectively implement the vision and objectives of the Plan. Each fact sheet offers a description, components, design application examples, photos, case study and resource reference links. These guidelines are a first step toward a more environmentally friendly infrastructure and toward achieving the ultimate vision of the Coyote Creek Watershed. Other resources from local, regional and national groups provide guidance on how to convert to green infrastructure from the traditional landscape.

Appendix I – Analysis of Potential Environmental Factors TM prepared by URS examined potential environmental benefits of plan implementation as well as potential adverse impacts that would continue if the plan is not implemented. Seventeen (17) categories from California Environmental Quality Act (CEQA) were applied to the Plan for a brief assessment. The report is not an actual CEQA evaluation but meant to provide initial findings on both positive and negative environmental impacts to influence future decision-making. It is important to note that the Plan will not be subject to a formal CEQA review unless local project proponents move forward with specific recommendations.

# Chapter 3

## Strategic Plan Framework

A strategic plan is a tool which traditionally guides future management decisions of an organization. However, the elements of a strategic plan, vision, mission, goals and objectives, also apply to geographic areas, in this case a watershed. These elements provide a framework or guidance on management actions within the watershed that multiple entities can undertake in separate efforts, but with regional benefits.

Stakeholder input on issues of concern is captured in the following section. Sorting through the issues revealed patterns of priorities which were turned in to goals and objectives. A vision statement embodied the spirit of this Plan, while the mission statement explains the role of this watershed management plan. These goals and objectives provide the framework for a plan of action, which is covered in Chapter 4. Success of this watershed management plan is based on stakeholders' collective ability to fulfill the framework objectives.

### a. Need for Plan

The following section captures the current problems and key opportunities in the watershed from the viewpoint of the stakeholders. Key concerns, expressed in Coyote Creek Watershed Council meetings are summarized below. These issues form the basis for the project goals and objectives. This planning effort was unable to address all of the concerns in detail. Some of the specific concerns are currently being addressed in detail by another entity. All concerns are mentioned here for consideration by future project proponents.

In some cases, stakeholder concerns and project opportunities contradict one another. It is the intent of this Plan to present the alternatives in Chapter 4 and not necessarily advocate for one over the other. Although the Plan may suggest protection of open space as a priority over development in terms of maintaining regional biodiversity, the Plan also promotes building in 'green infrastructure' designs into development projects to minimize impacts. It is not the intent of this Plan to dictate what happens where, only to provide some guidance on minimizing impacts to the watershed.

**Land Use**

Developed areas account for 84 percent of the watershed's land use, roughly half of which is residential. Industrial and commercial areas are also prevalent. Recreational areas are limited and most open spaces are concentrated in the upper reaches of the watershed. The small area of undeveloped land remaining in this watershed is in the Puente and Coyote Hills, areas still marked by oil fields and remnant vegetation, and the only portions of the watershed that can be considered non-urban. Creeks, native vegetation, and wildlife are still out of reach to most people in the region. This Plan focuses on land use planning, open space, habitat, park lands, trails and economic development. The primary economic development activities addressed in this Plan are new and redevelopment projects with habitat, open space and green infrastructure components.

Land use planning decisions are adopted in the general plans of cities and unincorporated county areas. URS Corporation examined over 20 general plans from Cities and the Counties in the watershed in Appendix F. They have found that general plan elements may not always consider regional context and tend to focus inside city boundaries, with the exception of the transportation and housing. This approach to land use decision-making has resulted in piecemeal management of stormwater, creeks, trails, open space, wildlife habitat and movement, water supply and groundwater resources. One stakeholder wondered if the Plan would address impact individual homes have on the watershed.

**Habitat and Open Space**

The issue of protecting wildlife corridors as well as general habitat restoration, preservation and protection were of concern to stakeholders. The most sensitive areas are in the Puente-Chino Hills, West Coyote Hills and Los Cerritos Wetlands, as well as along the creeks and tributaries. The "Missing Middle" study by Dr. Wayne Spencer, Conservation Biology Institute was brought up as a key report that documents the habitat value of the Puente-Chino Hills and Santa Ana Mountains. This study noted that wildlife preservation depends on functional connections along the length of the corridor. Currently, the corridor already contains some barriers to wildlife movement and development could cause a blockage to wildlife movement. One stakeholder mentioned that wildlife corridors should also be evaluated for their potential to be "disease corridors." Concerns over the incomplete dataset to establish a habitat restoration plan, and lack of knowledge about all of the habitat restoration opportunities were expressed.

Restoring wetlands was seen as a priority to stakeholders for both habitat and water quality. Locating potential sites that can be converted to constructed wetlands would be welcome. Identifying stream restoration and daylighting opportunities were also considered important. However, wetland restoration should be coordinated with groundwater protection and vector control. Understanding how to limit vectors was seen as important in the design and care of wetlands. Ecosystem restoration may include mercury contamination or water quality issues.

It was pointed out that North Orange County contains habitat for several endangered species, trails for hikers, bikers, educational resources, and an educational hub. The Coyote Hills should be saved for natural reserve and wildlife area. Acquisition of the Puente-Chino Hills and West Coyote Hills is a priority for habitat protection groups in the region. Restoring open space for habitat around the landfills was a priority as well. On the other hand, development projects in these two areas integrate habitat and wildlife corridors into their master plans. An

open space and recreation plan is currently being developed for Tonner Canyon by the landowner.

### **Trails**

Regional bike trails and multi-modal connectivity was also of concern to stakeholders. North Orange County does not have too many east-west trail connections. The question was asked if this Plan could address the lack of regional bike and riding trails, especially in the north part of the watershed around La Habra and surrounding communities. A master plan for a bikeway along Coyote Creek is currently being developed in a separate effort. Bridge crossings, access, and connections were also concerns.

### **Water Resources**

Reducing imported water is perhaps the most pressing issue in southern California. As populations increase, so will the demand. Water is vital to the prosperity, health and welfare of the region. Groundwater aquifers store rainfall as well as imported water supplies which are much costlier than local supplies. The current impervious design of our current public works infrastructure reduces groundwater recharge capability, increases peak flows into the creeks, and prevents natural filtration of urban runoff.

This watershed management plan addresses water resources from a public works infrastructure and policy perspective. Not all of the stakeholders concerns could be addressed but are worthy of consideration in subsequent planning efforts. Regional water supply issues such as surface water storage opportunities and groundwater quality were of concern to stakeholders. Issues related to water quality solutions, the regulatory environment and stream restoration of engineered channels were the most important to stakeholders with water supply and flood control issues of lesser concern. But regarding flood control, stakeholders felt it was important to identify corridors at risk for flooding and erosion. Upgrading channels was mentioned, but so was the alternative of removing concrete and restoring floodplains.

### **Water Quality**

Water quality is the top concern for many of the stakeholders. Polluted dry weather urban runoff and wet weather stormwater runoff impact the health of creeks and the ocean. Watershed characterization was seen as an important issue to address in order to locate trash hotspots or other water quality problems from a land use perspective. Beach closures and trash on Seal Beach impacts the quality of life and economic health. The question was asked "what are upstream cities doing about trash flowing downstream?" Specific concerns included the impacts of mercury on human health, and the presence of mosquitoes in water quality treatment areas. Polluted runoff from freeways are still of concern. Unresolved issues include continued need to educate residents and business owners of best practices in their homes and at work. Enforcement of violators is a continued problem due to lack of staffing or funding.

Stricter water quality mandates are the number one concern for Cities and other regulated entities. The need to meet federal and state water quality standards are draining resources for individual cities, building the case for regional coordination to address water quality problems. Part of the problem in this watershed is the split regulatory jurisdiction. Half of the watershed is regulated by the Los Angeles Regional Water Quality Control Board, the other half by the Santa Ana Regional Water Quality Control Board. As a result, two separate stormwater permits exist for the two counties. The burden of responsibility for implementing Total Maximum Daily Loads (TMDL) is on the County of Los Angeles, although runoff from

Orange and San Bernardino Counties flow into the San Gabriel River. 303(d) pollutant listings also need to be addressed across jurisdictional boundaries.

A lot of work has already been accomplished. Stormwater managers who participated in this planning effort felt it was important to take into account the extensive work done by the cities in Orange County through the NPDES Co-Permittee. The purpose of this plan is more a guidance document covering a broad range of watershed opportunities, including but not limited to water quality. The Environmental Resources section of the Watershed and Coastal Resources Division at the County of Orange are embarking on focused efforts through their Drainage Area Master Plan (DAMP) implementation efforts. They will be developing a Watershed Action Plan for the Coyote Creek Watershed in 2007 or 2008. Bi-county collaboration is taking place through the efforts of the Southern California Coastal Waters Research Project in the San Gabriel River Watershed.

A question was asked as to how cities are incorporating stormwater quality control into their planning and development processes. General Plans in Orange County have been updated to include water quality BMPs, and new projects require a Water Quality Management Plan (WQMP). As the plan unfolded, the stakeholders realized that it was the local city planners who were missing from the table. There is a gap between the function of stormwater managers to find solutions and planning and redevelopment agencies who are constantly approving projects which could integrate BMPs.

### **People**

The watershed is where people live, work and play. Issues regarding quality of life for our communities were raised by the stakeholders and analyzed by the project team. Concerns were raised in Watershed Council meeting on the lack of parks and open space in north Orange County. It was pointed out that this area is ethnically and economically diverse and lack of open space was a social and environmental justice issue. Issues of public health and safety were brought up by the project team.

Education, outreach and citizen participation of not only the watershed management plan development process, but on watershed issues were of concern to the stakeholders. Educating community leaders on the importance of watershed management was important to some stakeholders. Perhaps education centers could be identified or developed in the watershed for everyone's benefit. The question was asked whether the Coyote Creek Watershed Council is subject to the Brown Act, which it was not. Outreach and involvement by citizens was also important. There was a proposal for a citizen participation sub-committee which was a popular concept. A citizen representative from each community would be an ideal way to disseminate information out to the public about the watershed plan.

### **Management**

Traditional land management involves delineation at property lines and city boundaries. Predictably, this approach has posed resource management challenges with serious consequences over time. An extreme example of management challenges can be illustrated by the boundary between Los Angeles and Orange County. This border zig-zags across Coyote Creek at 90-degree angle, resulting in an obvious management predicament. Determining actual ownership and maintenance responsibility of the dozens of isolated triangular patches of land on either side of the creek is frustrating. The Orange County Flood Control District and the Los Angeles County Flood Control District address ownership and maintenance issues. This one example illustrates why piecemeal ownership works against regional resource management of creeks, contiguous open space and large groundwater aquifers.

Governance and collaboration within the watershed was an issue. There was agreement on the need to coordinate across jurisdictional boundaries using new models of governance such as the proposed Watershed Management Areas by the County of Orange. Discussion was held regarding the formality of the Coyote Creek Watershed Council. Positive and effective communications were also important. Monitoring what is said in public meetings is important to minimize conflict and increase understanding. Other issues raised included concerns over funding projects and oversight of the large quantities of data that will be collected for the project.

Many stakeholders had suggestions for additional entities to invite including the Puente Hills Habitat Authority, Whittier La Habra Open Space Coalition, County of San Bernardino and the City of Chino Hills, Department of the Navy, Southern California Association of Governments, local governments and cities, California Department of Fish and Game and elected officials.

# Coyote Creek Watershed Management Plan Strategic Plan Framework

## VISION

*Thriving communities living sustainably within a healthy Coyote Creek Watershed*

## MISSION

*Develop an integrative Watershed Management Plan outlining strategies that manages, protects, enhances and restores the watershed and provides a comprehensive framework for balancing natural resources management with sustainable economic development by designing with nature and building effective partnerships.*

## OBJECTIVES

### LAND

- Habitat
- Parks
- Open Space
- Economic Development
- Trails & Mobility

### WATER

- Water Supply
- Impervious Surfaces
- Water Quality
- Flood Protection & Sediment Management
- Wetland Protection

### PEOPLE

- Aesthetics
- Education & Outreach
- Environmental Justice
- Health
- Citizen Participation & Stewardship

### MANAGEMENT

- Organization
- Collaboration
- Communication
- Multiple Objectives Projects

## IMPLEMENTATION STRATEGIES

General Plan Policies

Green Infrastructure Site Design Guidelines

Project Opportunities

Management Framework

## OUTCOMES

## b. Vision, Mission, Goals and Objectives

### Definitions

A *Vision* paints a picture of the desired future condition of the watershed. A *Mission Statement* describes the role of the Plan in achieving the vision. *Goals* are the broad courses of action that stakeholders will implement to achieve the Vision. *Objectives* are measurable courses of action that supports the goals. They can also be viewed as more specific goals. *Strategies* are the specific actions that support the goals. They are recommendations that are offered as voluntary actions, not regulated or enforceable. Strategies take the form of one of the 5 "P's," policies, projects, plans, programs or partnerships.

### Strategic Plan Framework

Through stakeholder and project team input, the following strategic plan elements were created for this watershed management plan. Four goals convey an ideal future condition for land, water, people and management. Each goal is followed by four or five objectives that each address one facet of the goal. Note, some would argue that the objectives are in fact goal statements, which could also be true. In this case however, a broader goal statement was made in order to emphasize the integrative nature of this Plan. For example, water quality is at the top of everyone's mind. But in reality, water quality is intricately tied into water supply, groundwater resources, aquatic and terrestrial habitat, land use and management issues among others. It is simply a piece of the watershed management puzzle.

### Vision

*Thriving communities living sustainably within a healthy Coyote Creek Watershed*

### Mission Statement

*Develop an integrative Watershed Management Plan outlining strategies that manage, protect, enhance and restore the watershed and provide a comprehensive framework for balancing natural resource management with sustainable economic development by designing with nature and building effective partnerships.*

### Goals and Objectives

**Land:** *Design with nature to promote a balanced land use mosaic benefiting public & private interests*

- L-1. *Habitat: Restore, maintain, and protect habitat quality and quantity*
- L-2. *Recreation: Increase recreational opportunities, access and connectivity*
- L-3. *Open Space: Enhance open space opportunities for the public*
- L-4. *Economic Development: Integrate best watershed practices into economic development activities*
- L-5. *Trails/Mobility: Improve multi-modal connectivity, including bike paths and trails*

**Water:** *Restore hydrologic functioning to the maximum extent practicable*

- W-1. *Water Supply: Decrease dependence on imported water*
- W-2. *Impervious Surfaces: Increase permeability of the urban environment*

- W-3. Water Quality: Improve surface water quality and protect groundwater resources to maximize beneficial uses for the present and the future*
- W-4. Flood Protection/Sediment Management: Balance flood protection with sediment management and habitat*
- W-5. Wetland Protection: Coordinate wetland protection, creation and restoration with other surface and groundwater protection programs*

**People:** *Connect communities to the watershed to foster 'sense of place'*

- P-1. Aesthetics: Create a community-based identity by improving visual quality*
- P-2. Education & Outreach: Increase watershed awareness and education*
- P-3. Environmental Justice: Promote environmental justice through balanced projects and plans*
- P-4. Health & Safety: Maintain and improve the health & safety of the public in the watershed*
- P-5. Citizen Participation & Stewardship: Increase citizen participation and stewardship within the watershed*

**Management:** *Effectively manage watershed resources through collaborative partnerships*

- M-1. Organization: Organize efficiently to manage cross-jurisdictional resources*
- M-2. Collaboration: Facilitate collaboration to yield innovative and integrative projects, plans, programs, policies and data products*
- M-3. Communication: Promote effective communication mechanisms between the public and private sectors to resolve conflicts and maximize resources*
- M-4. Multiple Objective Projects: Address multiple objectives of private and public interests through creative projects and programs*

## **Strategies**

This document contains a suite of strategies for implementation. The strategies provide guidance on specific activities that would address one or more of the goals and objectives. The following four categories of strategies, detailed in Chapter 4, include:

- General Plan Policies
- Key Projects, Plans and Programs
- Green Infrastructure Site Design Guidelines
- Management Strategies

# Chapter 4

## Key Implementation Strategies

This section provides strategies to improve the overall health of the watershed. Recommendations are given in the areas of general plan policies, an action matrix with suggested projects, plans and programs, site design guidelines, and management partnerships. The strategies for implementation provided here should be assessed by each municipality or stakeholder as to their applicability and whether it contributes to local goals.

### a. General Plan Policy Strategies

General plans are a City's blueprint for how to manage land resources. From a watershed perspective, they are developed in a vacuum with regards to water resources, stormwater runoff, regional habitat and open space issues. A new generation of general plans acknowledges a connection to these regional issues. Cities within Orange County were required to update their general plans to include water quality policies. This is a step in the right direction. Additional policies are suggested in the lists below and represent a balanced set of policies for improved watershed management.

The policy strategies presented below are grouped by general plan elements for ease of use. The Water element, currently considered optional, is recommended by this Plan for inclusion because of its importance to watershed management. Rain falls on all land, therefore water issues need to be factored into all land use planning. These strategies are explained in further detail in Appendix F - General Plan Policy Strategies Technical Memorandum. Approximately 25% of the policies are taken from adopted general plans from around the watershed while others are taken from the Ahwanhee Principles. This report indicates the sources of these policies.

## Land Use Element

- Establish an urban growth boundary and promote compact development.
- Promote infill development and facilitate redevelopment of existing neighborhoods to preserve greenfields and open spaces by using innovative zoning tools, such as overlay zones.
- Adopt Smart Growth codes to parallel conventional development codes.
- Locate as many activities as possible within easy walking distance of transit stops and multi-modal trails to reduce dependence on the automobile.
- Equitably distribute potentially undesirable sites such as wastewater treatment facilities throughout the City.
- Work closely with regional and local agencies to ensure a balanced land use pattern furthering land use objectives common to the community, its neighbors and larger communities of interest.
- Community design should be compact, mixed use, walkable and transit-oriented to minimize automobile-generated urban runoff pollutants and preserve the open lands that absorb water.

## Water Element

- Water holding areas such as creek beds, recessed athletic fields, ponds, cisterns, and other features that serve to recharge groundwater, reduce runoff, improve water quality and decrease flooding should be incorporated in the urban landscape.
- Permeable surfaces should be used for hardscape. Impervious surfaces such as driveways, streets, and parking lots should be minimized so that land is available to absorb storm water, reduce polluted runoff, recharge groundwater and reduce flooding.
- Employ strategies and design features that will reduce the amount of impervious surfaces (i.e. paved area) for new development projects.
- Work with local water districts to ensure that adequate water resources are available to meet demands of current and future development and reduce the demand for non-local water resources through the utilization of local groundwater resources.
- Reduce urban run-off from existing development and strive to achieve zero-runoff from new development.
- Protect and enhance the quality of water in local rivers and wetlands from “non point” source pollutants.
- Protect water quality through cooperative management and enforcement efforts.
- Mitigate runoff from all land uses, especially commercial and industrial land uses, and guard against the pollution of ground water resources.

## Circulation and Infrastructure Element

- Plan neighborhood streets, pedestrian walks, and bicycle paths as a system of fully connected multi-modal trails.
- Support and coordinate the development and maintenance of local trails in conjunction with the County’s regional bikeway plans.

- Encourage pedestrian and bicycle use to reduce vehicular trips. Design safe and efficient pedestrian and bicycle routes by being compact, providing trees and lighting, and by discouraging high speed traffic.
- Create and maintain linkages between open spaces and pedestrian access that serve the entire community.
- Encourage multi-purpose development along waterfronts, where safe to do so.
- Designate flood control channels, maintenance roads, transportation right-of-ways, abandoned railroad lines and fire control roads as major elements of the open space/recreation network to provide a link with other open spaces and recreational areas within a community and adjacent city and county recreation plans.
- Encourage the planting of trees and other vegetation, especially native species, to enhance the environment, and promote visually pleasing landscaped corridors throughout the community.

## Open Space Element

- Develop a high-quality network of parks and recreational facilities that meet the needs of families, young adults, seniors, children and disabled individuals.
- Adopt a parkland standard (e.g. three acres of parkland per 1,000 residents) and require new development and redevelopment to provide recreational opportunities, especially in park-poor areas, for their residents in accordance with the local park standard.
- Provide ample supply of specialized open space in the form of squares, greens and parks whose frequent use is encouraged through placement and design.
- Review opportunities to combine active and passive open space resources that also serve as buffer zones. Maintain existing and create new open space buffers adjacent to flood control facilities and utilities.
- Protect new and reestablished natural habitats and ecological preserves including wetlands, woodlands, and other native plant associations.
- Work with regional agencies, other public agencies, including other parks and recreation departments and school districts, and the public in developing cooperative park and recreation programs and establish agreements for the joint use of recreation and open space facilities.
- Actively pursue the acquisition of open space areas for recreation activities and to preserve environmental features that are valuable for their scientific, educational, conservation, wildlife linkage, scenic, agricultural, and cultural values.
- Encourage the conservation of open space lands which detain stormwater runoff, preventing erosion, siltation, flooding, and drought, and discourage the early conversion of open space to land uses incompatible with watershed functions.
- Create or restore wetlands and upland ecosystems that contribute to the regional system of open spaces.
- Identify creative new park creation opportunities through land use conversion of underutilized streets, commercial, or public utility lots.

## Conservation Element

- Encourage the use of native plant associations in new development landscapes and promote the replacement of existing water consumptive landscapes to reduce per capita water consumption.

- Conserve sensitive species, plant communities and wildlife habitats through open space dedication and easements, creative site design, and other workable mitigation actions.
- Educate the public regarding the need for water conservation, energy conservation, techniques which can be employed, and systems which are reliable.
- Work with school districts to incorporate water conservation and watershed awareness in the curriculum.
- Protect, enhance, restore, and maintain natural drainage courses in their existing state, and explore day-lighting and removal of concrete-lining along channels, where safe to do so, allowing for greater groundwater recharge opportunities, as well as, wildlife habitat.
- Natural resources such as wetlands, flood plains, recharge zones, riparian areas, open space, and native habitats should be identified, preserved and restored as valued assets for flood protection, water quality improvement, groundwater recharge, habitat, and overall long-term water resource sustainability.
- All aspects of landscaping from the selection of plants to soil preparation and the installation of irrigation systems should be designed to reduce water demand, detain runoff, decrease flooding, and recharge groundwater.

## Health and Safety Element

- Design public parks and trails to encourage the attention and presence of people at all hours of the day and night.
- Apply federal and state water quality standards and wastewater discharge requirements in the review of development proposals that relate to type, location and size of the proposed project, for surface and groundwater to safeguard public health.
- Design flood hazard mitigation measures that advance multi-purpose goals of recreation, resource conservation, preservation of natural riparian vegetation and habitat and the preservation of the scenic values of streams and creeks while maintaining flood protection.

## Economic Development Element

- Work together with the local governments, businesses, schools, and communities to create a vibrant local economy, through a long-term investment strategy that: encourages local enterprises; serves the needs of local residents, workers, and businesses; promotes stable employment and revenues by building on local competitive advantages; protect the natural environment; increases social equity; and is capable of succeeding in the global marketplace.
- Visioning, planning and implementation efforts should continually involve all sectors, including the voluntary civic sector and those traditionally left out of the public planning process.
- Support and pursue economic development that maintains or improves, not harms, the environmental and public health.
- Enterprises should work as civic partners, contributing to the communities and regions where they operate, protecting the natural environment, and providing workers with good pay, benefits, opportunities for upward mobility, and a healthful work environment.

- Protect the natural environment and increase quality of life, neighborhoods, communities and regions should have compact, multi-dimensional land use patterns that ensure a mix of uses, minimize impact of cars, and promote walking, bicycling, and transit access to employment, education, recreation, entertainment, shopping, and services. Economic development and transportation investments should reinforce these land use patterns, and the ability to move people and goods by non-automobile alternatives wherever possible.
- Communities and the private sector should cooperate to create regional structures that promote a coherent metropolitan whole that respects local character and identity.

## Key Policy Implementation Strategies

In summary, key strategies for implementing these general plan policies include:

- Form technical review committee to review and make recommendations on applicable policies (per City/municipality)
- Take recommendations to City Council or County Board of Supervisors
- Integrate new policies into General plans and other planning documents
- For cities in the watershed whose general plans are over 10 years old, update plans with appropriate strategies from list below (Buena Park, Chino Hills, Diamond Bar, Fullerton, Hawaiian Gardens, La Habra and Los Alamitos)
- Add the Water Element to all future updates
- Adopt Ahwahnee Water Principles for Resource-Efficient Communities

### b. Action Plan – Key Projects, Plans and Programs

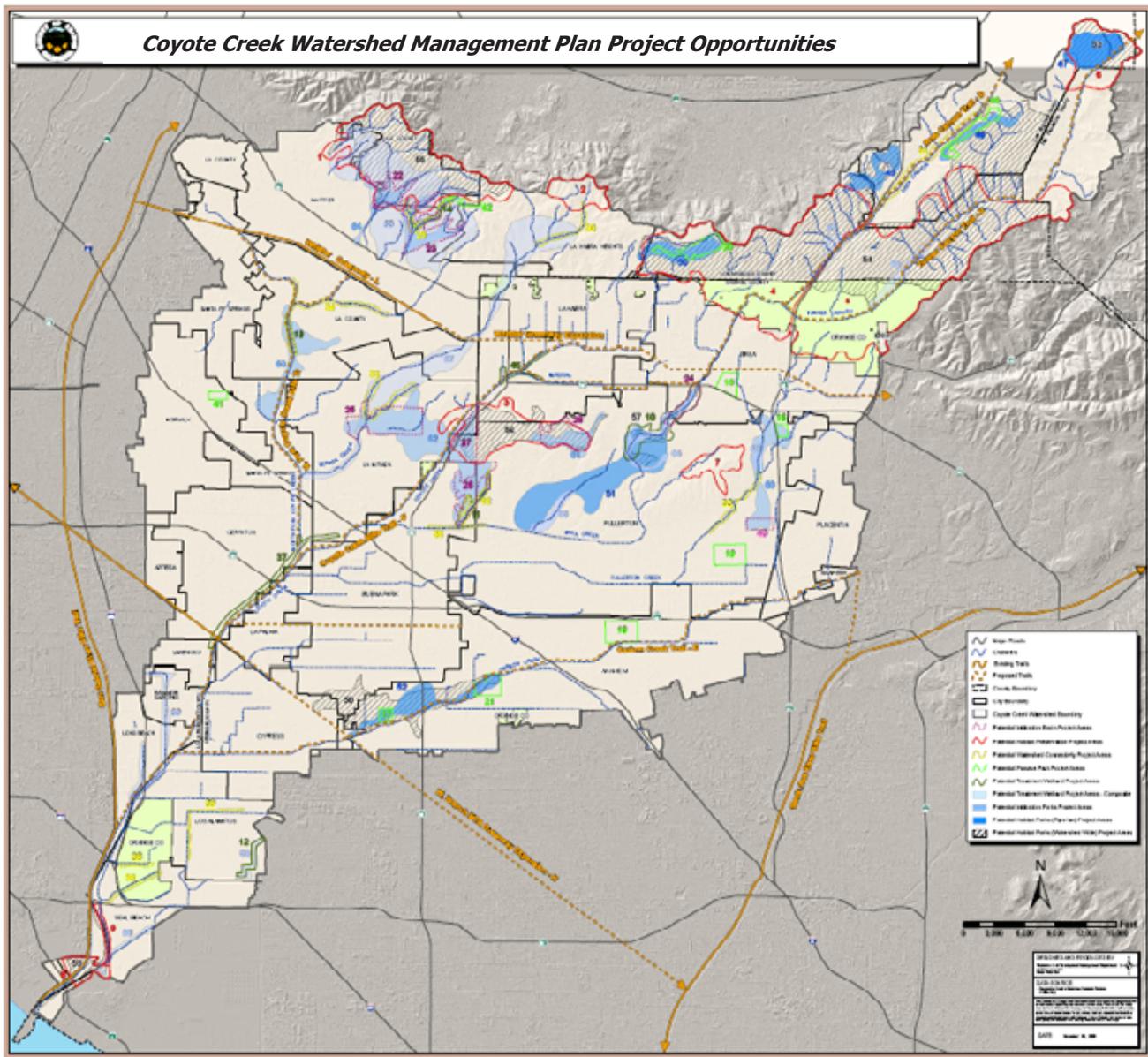
This Action Plan provides a snapshot of project alternatives for municipalities, agencies, developers and individuals in the watershed. The projects listed herein are in agreement with the vision, goals and objectives put forth in this document. This Action Plan provides a working roadmap for capital investment, maintenance, and provides a guide for future policy, planning and decision making across all stakeholder disciplines. Project opportunities are within everyone's grasp.

It is important to note that while one project can have significant beneficial results at the site level it is the cumulative benefits derived from the pursuit of multiple projects occurring over time and throughout the watershed that will achieve the greatest return for a more sustainable and healthy future.

For ease of navigation the projects have been sorted into six categories reflecting the key objectives from the strategic plan framework including Water Quality/Stormwater, Water Conservation, Open Space Habitat, Creeks and Wetlands, Parks and Trails. Project opportunities were derived from both stakeholders, the project team and from independent GIS analysis.

High priority opportunities for improving watershed health are shown on the following map. Additional high priority opportunities can be founded in the Habitat Master plan Appendix H-1 under 'Stepping Stone Habitat and Key Linkages Opportunities' and H-8 for floodplain opportunities. See Appendix D for more detailed information on criteria used to select these project opportunities. Appendix E provides more information on the proposed projects including brief descriptions, and locations at-a-glance in a matrix format. Each City can quickly

locate project opportunities in their community through this matrix. Detailed maps from Appendix E (which are duplicates of the maps developed in Appendix D) also illustrate locations of project opportunities.



## Water Quality / Stormwater Management

Many current efforts to address water quality and regulatory mandates are taking place in the region. Coordinated efforts are taking place in the San Gabriel River Watershed, and separately in Orange and Los Angeles Counties. These activities are opportunities to solve water quality problems on a regional basis. Some of the key efforts currently taking place includes:

- MS4 NPDES Permit, for the Santa Ana and Los Angeles Regional Boards
- County of Orange facilitates the monthly NPDES General Permittee meetings to coordinate on regional stormwater permit issues

- Basin Plan updates by the Regional Boards
- Pending Metals Total Maximum Daily Load (TMDL)
- San Gabriel River Watershed Water Quality Monitoring and Modelling Program, Southern California Coastal Waters Research Program
- Los Angeles County's Stormwater Program Plan
- Orange County's Drainage Area Master Plan (DAMP), stormwater program plan
- Pending "Watershed Chapter/Watershed Action Plan" for the Coyote Creek Watershed, an appendix of the DAMP
- Orange County Trash Task force that could evaluate this watershed management plan for trash reduction issues

The following treatment wetland project opportunity areas were located via GIS spatial analysis. Note, these suggestions require further investigation as to their feasibility. The project sites are not well-defined, but represent an opportunity that was found to exist through GIS analysis.

- Brea Canyon Treatment Wetland
- Buena Park Treatment Wetland
- Bolsa Chica Channel Treatment Wetland
- La Canada Verde Creek Treatment Wetland
- Villaverde Treatment Wetland
- Coyote Creek Treatment Wetland
- La Habra Treatment Wetland
- Chino Hills Treatment Wetland Park
- Brea Treatment Wetland Park
- La Mirada Creek Treatment Wetland Park
- Whittier Hills Treatment Wetland Park
- South Coyote Creek Improvements Park
- Anaheim Treatment Wetland

These projects were suggested by stakeholders and the project team:

- Retrofit Rossmoor and Los Alamitos Flood Control Basins for Regional Wet Weather Retention/TMDL compliance
- Watershed-wide Wet Weather Retention Basin Opportunities Study (See Appendix D - Groundwater Recharge Project Opportunities)
- La Habra Channel Water Quality
- Dry Weather Diversion in Seal Beach
- Stream Water Quality Treatment Strategies
- Natural Treatment System (NTS) Opportunities Study
- Sanitary Sewer Overflow Study
- Source-Tracking Study
- General Plans – Watershed Integration
- TMDL Collaboration across county boundaries to address water quality and trash issues watershed-wide; i.e., form a sub-watershed trash task force, expand Orange County's Trash & Debris Task Force
- El Dorado Regional Park Wetlands
- Los Cerritos Wetlands Restoration
- British Columbia Model of integrated stormwater management

## Groundwater Recharge/Stormwater Retention Opportunities

Groundwater basins can effectively store water for future use. Groundwater recharge occurs when retention basins are designed to capture storm flows and slowly infiltrates into the aquifer. Traditional recharge basins are located along waterways to take advantage of large quantities of flows. With the GIS spatial analysis of opportunities, retention basins were located throughout the watershed, regardless of land ownership (See Appendix D). In some cases, basin opportunities were identified on park lands or other types of facilities. If conditions are optimal, these sites can be retrofitted for stormwater capture and percolation.

The following project sites have known soil characteristics which are suitable for infiltration, are in relatively flat areas, are on land use which is suitable to basin development, and are adjacent to channels for water supply. In addition, low-lying areas which may be gravity-fed from existing channels are represented. As noted in the habitat master plan these drainageways, with impermeable surfaces removed may be the very best locations for infiltration for groundwater recharge. Specific projects within these areas could potentially include new infiltration basins, retrofit of existing public facilities, and retrofit of developed or private facilities.

- La Canada Verde Creek Project Area
- La Serna Project Area
- Brea Canyon Project Area
- LA Mirada Project Area
- Buena Park Project Area
- Coyote Creek Project Area
- West Coyote Hills Project Area
- CSU Fullerton Project Area
- Edison Project Area
- Fullerton Infiltration Park
- Coyote Hills Infiltration Park
- La Mirada Infiltration Park
- La Canada Verde Creek Infiltration Park

The next implementation steps for these infiltration projects may include:

- Further characterize infiltration needs and objectives for subwatershed
- Identify agency proponents for infiltration facilities and a project support team
- Identify current and proposed land use within proposed project areas
- Identify parcel boundaries and current land owner(s) within the area
- Identify current City general plan or zoning restrictions on the parcels in the area
- Identify any local or landowner knowledge, interest, or intent in regards to the parcels in the area
- Develop specific project boundaries and identify a "proposed project"
- Develop a "project study report" for the proposed project which would evaluate multiple factors, hydrology and infiltration potential, real estate value, ownership, owner intent, suitable basin types, and potential funding sources

Additional project opportunities expressed by stakeholders include:

- Assess feasibility of Brea and Fullerton Dams being retrofitted to capture and infiltrate stormwater runoff for both water conservation and improve water quality in creeks
- Coordinate with regional water management agencies on feasibility of surface water storage alternatives

Key water conservation entities in the region include:

- Metropolitan Water District of Southern California, Los Angeles – [www.bewaterwise.com](http://www.bewaterwise.com) campaign
- California Urban Water Conservation Council – supports member water agencies with conservation programs and legislation
- Irvine Ranch Water District – progressive water agency in central Orange County with a tiered-rate structure, the Natural Treatment System (NTS) watershed-based urban runoff treatment system
- Integrated Regional Water Management Plan Program (IRWMP), Proposition 50-Chapter 8 funding opportunities – through the County of Los Angeles Department of Public Works, Alhambra and the Santa Ana Watershed Project Authority, Riverside

## Habitat Conservation Opportunities

The following potential habitat conservation project areas represent potential highly suitable areas for general habitat preservation and restoration as determined through GIS analysis. They are higher quality habitats, with contiguous open space. Note, the following opportunities represent a project “area,” versus a specific project site. Multiple patches of land could be included in the project area. Field verification is needed to seriously pursue viable projects. Refer to Appendix H-1 for additional detail.

- Puente Hills
- Reposado
- West Coyote Hills Open Space & Robert E. Ward Nature Preserve (without development)
- E. Puente Hills
- Chino Hills
- Tonner Canyon
- East Coyote Hills
- Brea Habitat Park Area
- Western Habitat Park Area
- San Gabriel River Habitat Park Area
- Los Cerritos Wetlands Restoration Project

Plan recommendations and specific activities within these project areas may include land acquisition from willing sellers, land conservation, mitigation banking, mitigation set-asides, park establishment or federal ownership and land exchanges. Establishment of open space districts or land trusts can be mechanisms for protecting the open space areas in perpetuity. These concepts are discussed in detail within Appendix D.

Within the Opportunities and Constraints technical memo (See Appendix D), potential next steps for assessing habitat preservation opportunities are outlined areas including:

- Further characterize habitat quality and continuity for project suitability
- Identify parcel boundaries and current land owner(s) within the area
- Identify current City general plan or zoning restrictions on the parcels in the area
- Identify any local or landowner knowledge, interest, or intent in regards to the parcels in the area
- Develop specific project boundaries and identify a “proposed project”
- Identify stakeholders and a project support team
- Develop a “project study report” for the proposed project which would evaluate multiple factors, such as land habitat value, real estate value,

ownership, owner intent, conservation strategies, and potential funding sources.

- Connectivity of the Puente-Chino Hills to the San Gabriel Mountains via the San Gabriel River corridor

The following project opportunities were suggestions by stakeholders and the project team. Certain projects may seem contradictory to the projects mentioned above, such as the West Coyote Hills or Tonner Canyon. It is not the intent of this Plan to specifically recommend one project over another, although generally recommendations tend to lean towards open space protection which has direct watershed benefits and promotes the redevelopment of existing urban land uses to service multiple objectives.

- West Coyote Hills Open Space & Nature Reserve (with Pacific Homes Development)
- Open Space Acquisition Plan
- Tonner Canyon Freeway Bypass
- Tonner Canyon Recreation/Open Space Plan
- Brea Oil Company Land Reclamation
- Brea Canyon Trail/Sycamore Canyon Park
- Chino Hills State Park
- Lambert Avenue Wildlife Corridor
- Tonner Canyon Wildlife Corridor
- West Coyote Hills Community & Open Space
- West Coyote Hills Open Space
- West Coyote Hills to Puente Hills Habitat Connectivity
- Lower San Gabriel Habitat Park
- Puente-Chino Hills Open Space District Feasibility Study
- Regional Hills Open Space Management Plan
- Whittier Ecological Reserve Plan
- NCCP Feasibility Assessment for the Puente-Chino Hills and Santa Ana Canyon

## Riparian/Wetland Restoration Opportunities

These are potential opportunities for riparian and wetlands restoration based on GIS analysis. The feasibility of these specific project areas need to be assessed before a viable project can be identified.

- Los Cerritos Wetlands Restoration Project
- Los Alamitos Channel
- Tonner Canyon Riparian Habitat Park Area
- Brea Canyon Riparian Habitat Park Area
- Rincon de la Brea Riparian Habitat Park Area
- Northern Riparian Habitat Park Area
- Pacific Riparian Habitat Park Area
- Western Riparian Habitat Park Area
- La Mirada Park Creek Restoration
- La Mirada/Fullerton Creek Restoration

General stream and wetlands restoration opportunities were offered by stakeholders and project team members. Project ecologist Verna Jigour provides additional habitat restoration opportunities in Appendix H – Habitat Restoration Master Plan and H-4.

- Creek Daylighting Study
- Creek Improvements Master Plan
- Natural Vs. Improved Channel Inventory
- Wetlands, Riparian & Floodplain Enhancement Feasibility Opportunities Study

## Passive Park Creation Opportunities

Spatial analysis performed in Appendix D illustrates park-poor areas, overlaid onto demographic maps. These represent areas of park creation or schoolyard joint-use opportunities:

- Brea Park Project Area
- Fullerton Park Project Area
- Western Park Project Area
- Anaheim Park Project Area
- Commonwealth Park Project Area
- Aera Energy-Shell Park Project Area
- Carbon Creek Park Project Area
- Brea Canyon Park Project Area
- Norwalk Park Project Area
- San Miguel Park Project Area
- Placentia Park Project Area

Park needs in north Orange County and southeast Los Angeles County warrant additional park creation opportunities. Further park creation opportunities can be found in Site Design Guidelines (See Appendix G) for “Park Creation” and in the 606 Studio Thesis report found in Appendix J. These resources advocate for creative park creation opportunities in urbanized areas including leftover commercial or municipal lots or underutilized streets which could be closed and converted to open space. On a larger scale, the National Park Service has been conducting a San Gabriel River Watershed Special Resources Study, which will examine opportunities for the Service to bring resources to this region.

## Trail Opportunities

The following opportunities for improving the regional trail system were identified by stakeholders:

- North Fork Coyote Creek Bike Trail
- Seal Beach Open Space-Trail Study
- Greenway Projects Opportunity Study
- Coyote Bikeway to West Coyote Hills Trail Connection
- Coyote Bikeway to Whittier Greenway Expansion
- Skyline Trail Connection
- Tonner Canyon Trail
- Brea Creek-Coyote Creek Bikeway
- Carbon Creek Bikeway
- Coyote Creek Bikeway
- Gateway Project
- West Branch MTA Greenway Expansion
- Whittier Greenway Expansion

## Interpretive/Greenway Access Opportunities

The following watershed interpretive or greenway access opportunity areas were identified using GIS analysis:

- La Serna Interpretive Opportunity Project Area
- La Mirada Creek Interpretive Opportunity Project Area
- Brea Canyon Interpretive Opportunity Project Area
- Los Coyotes Interpretive Opportunity Project Area
- La Mirada Interpretive Opportunity Project Area
- La Canada Interpretive Opportunity Project Area
- Fullerton Creek Interpretive Opportunity Project Area
- Brea Creek Interpretive Opportunity Project Area
- Rossmoor Interpretive Opportunity Project Area
- Los Alamitos Interpretive Opportunity Project Area

## Program Opportunities

These were identified by stakeholders as education and outreach program opportunities:

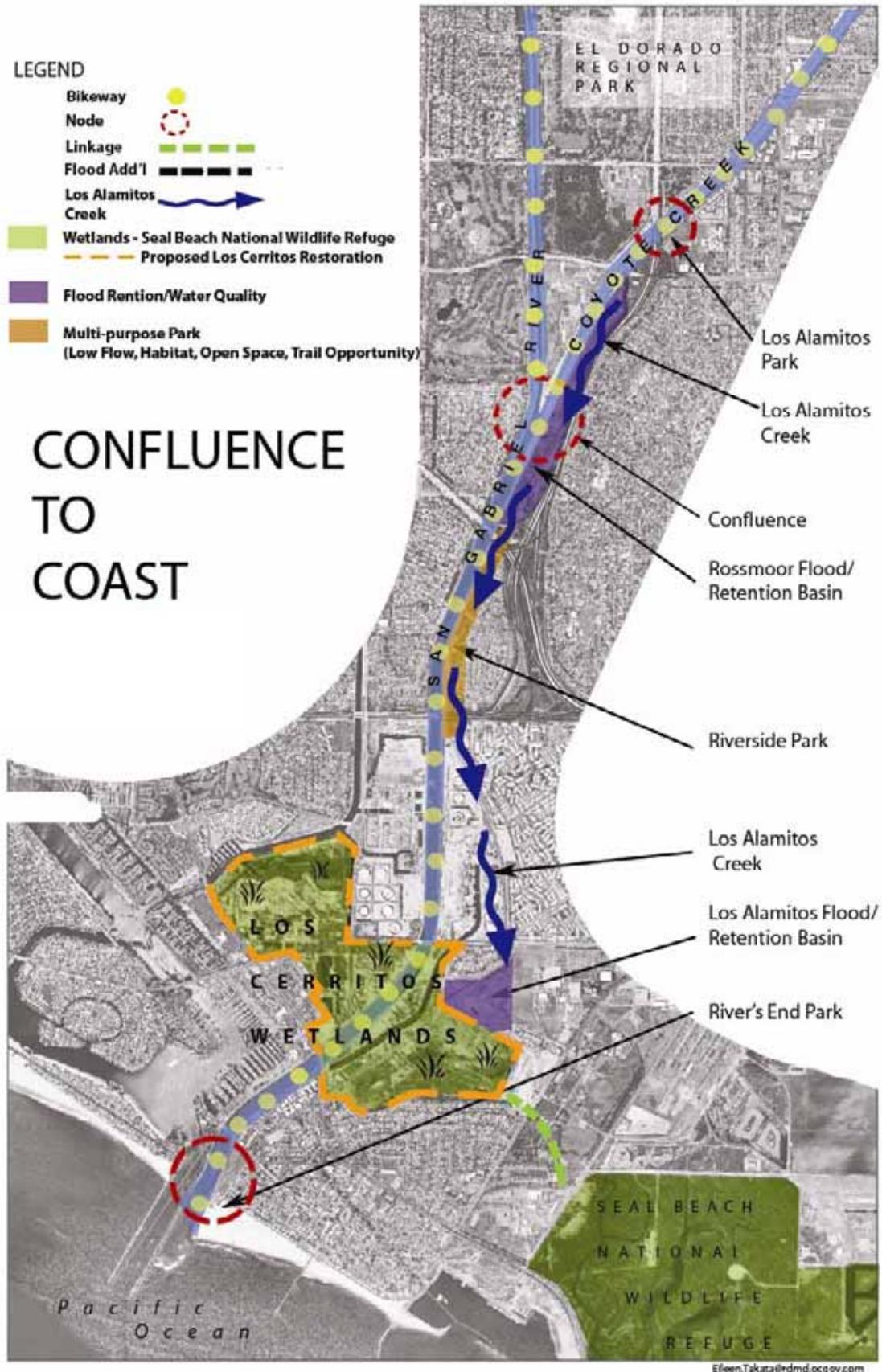
- Environmental Justice Program
- "Idea House" Demonstration Project
- Incentive Programs to Implement WMP Goals
- Watershed Education & Outreach for the Public
- Watershed Education Program for Schools
- Watershed Stewardship Program
- Citizen Watershed Commissions
- Colleges & Universities Outreach and Volunteer Programs

## Multi-use Projects

The Confluence-to-Coast Project is a potential regional water quality, flood control, ecosystem restoration and recreational opportunity for the entire San Gabriel River Watershed, including Coyote Creek. This project opportunity would need to a feasibility-level analysis before it could be realized. It has the potential to address wet weather water quality regulations as well as restoring the Los Cerritos Wetlands. This project has the potential to become a spin-off project of the U.S. Army Corps of Engineers Study, if it meets federal criteria for ecosystem restoration. If so, it would be eligible for federal funding.

The concept diagram on the following page illustrates the major features of the proposed project area. Major project features could include:

- Los Cerritos Wetlands restoration
- Los Alamitos Creek restoration
- Future retrofit of the Rossmoor and/or Los Alamitos Flood Control Basins for wet weather retention
- Greenway corridor for parks, trails and wildlife along the San Gabriel River, connecting the coastal wetlands of Los Cerritos and Seal Beach Wildlife Refuge to the El Dorado Regional Park, Puente-Chino Hills and San Gabriel Mountains
- Future San Gabriel River floodplain restoration feasibility study



## Key Project Strategies

To activate implementation of the opportunities listed above, key strategies for cities, special districts, landowners, non-profits, and other project proponents include:

- Determine project opportunities in each community
- Form project review committee to prioritize projects from Action Plan
- Determine feasibility of project through technical review committee
- Integrate projects into local planning documents or capitol improvement plans
- Locate funding and other partners
- Execute cost-share agreements to cover design, implementation and long-term management
- Implement projects

### c. Green Infrastructure Site Design Guidelines

The Green Infrastructure Site Design Guidelines (Guidelines) are a series of eight (8) fact sheets for use by developers, property owners and municipalities in urban renewal projects. They are designed to encourage and inspire conversion of our traditional infrastructure to multi-objective landscapes. The Guidelines provide design suggestions for some of the most common urban land use types including streets, rooftops, schools, parks, underutilized spaces and single family homes (See Appendix G).

The cumulative benefits of these green infrastructure guidelines would result in improved water quality, increased local water supplies, enhanced urban habitat, improved pedestrian experiences and increased educational opportunities. In addition to site specific designs for developers and property owners, these fact sheets provide planning methods for consideration by city planners for adoption into General plan policies and zoning ordinances. These can be part of an overall program for National Pollutant Discharge Elimination System (NPDES) compliance as well as various urban renewal efforts.

### Fact Sheets

- **GI-1 Green Streets** - Conversion from traditional stormwater to water conservation design
- **GI-2 Urban Greenways** - Network of lineal open spaces to provide linkages of community resources, trails and habitats
- **GI-3 Urban Park Creation** - Activate under-utilized land to become functional open spaces and parks
- **GI-4 Go "Native" Landscape Conversion** - Conversion from conventional and thirsty landscapes to multi-beneficial native plants
- **GI-5 Schoolyard Ecosystem** - Landscapes for learning to teach sustainability and stewardship

- **GI-6 Parking Lot Aquifers** - Harvest dry weather runoff and storm flows for filtration and groundwater recharge benefits
- **GI-7 Green Roofs** - Utilize rooftops as a resource for energy efficiency, stormwater management and visual benefits
- **GI-8 Green Home Garden** - Green infrastructure practices for residential landscape and site design

**Green infrastructure** A watershed-friendly approach to storm-water management.

It is the network of water harvesting landscapes and hardscapes that conserves water, reduces flood risk, protects aquatic habitat, supports native landscapes, improves air quality and contributes to healthy communities and a higher quality of urban life.

Green infrastructure reveals natural processes instead of hiding them, providing opportunities for increased public education and interpretive opportunities. Green infrastructure (GI) is accomplished by retrofitting existing public works projects over time including streets, parking lots, stormdrains, channels and utilities. Future revitalization efforts for single buildings, commercial centers, blighted zones or residential neighborhoods are additional opportunities to integrate green infrastructure principles.

## Key Strategies for Guidelines

The next steps for the *Guidelines* are:

- Identification of green infrastructure conversion opportunities by City or community
- Form technical advisory committee review to address Beneficial Uses for Regional Water Quality Control Board standards (Region 4 and Region 8)
- Update Fact Sheets to meet CASQA Stormwater BMP Handbook standards
- Seek funding and partners to implement pilot projects
- Implement appropriate guidelines in all future new or redevelopment projects

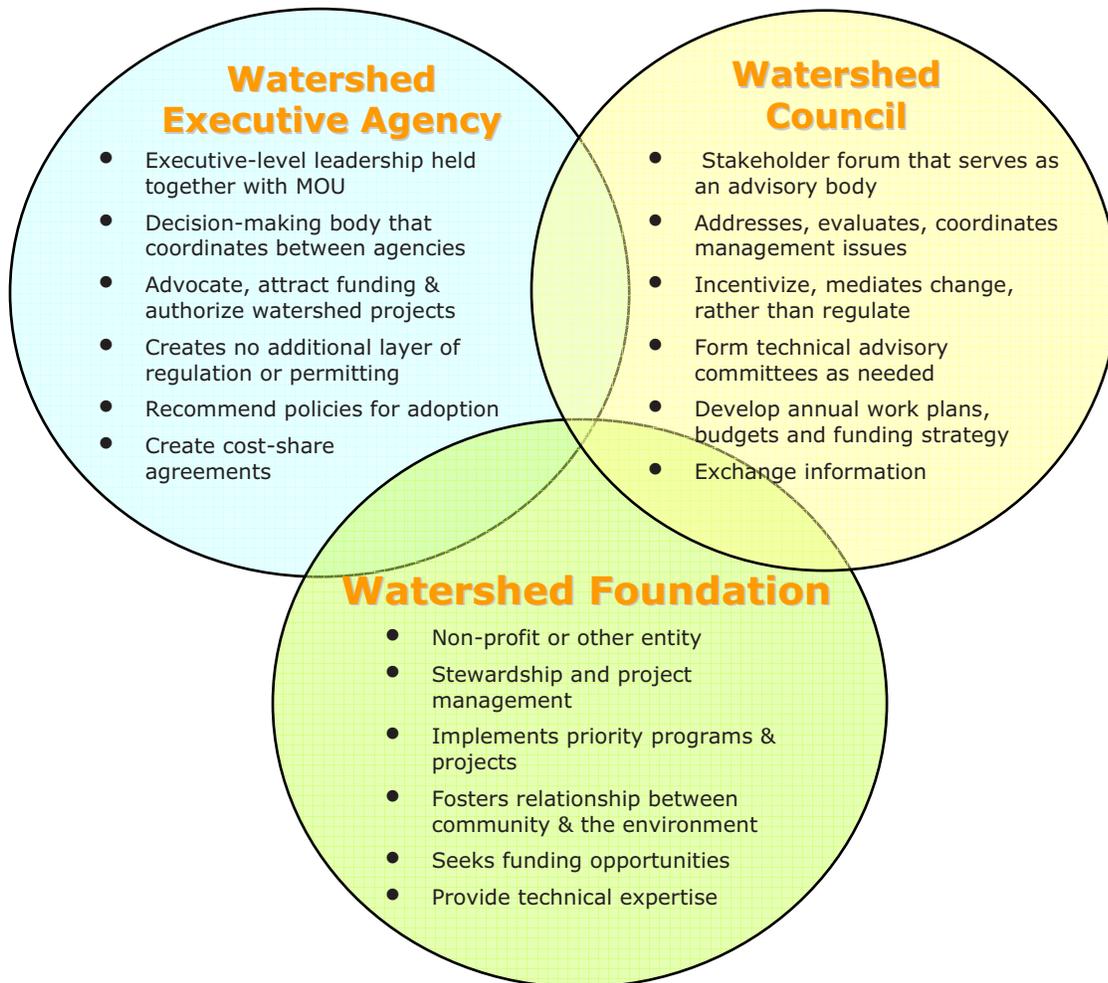
## d. Management Framework

The focus of this section is to address the challenges of effective watershed management through alternative governance structures. Effective watershed management requires inter-agency coordination between single-purpose departments as well as cross-jurisdictional coordination between individual property owners and cities. Organizing to address watershed, ecosystem, recreational, and other regional issues make sense in the long run.

One proposed model for how to organize is adopted from the "Newport Bay Watershed Management Plan," developed for the County of Orange by Krista Sloniowski when she was with the U.S. Army Corps of Engineers in 2004. The Newport Plan suggests three separate but related entities be formed to effectively govern watershed resources in a collaborative manner, including a Watershed Executive Agency, a Watershed Council and a Watershed Foundation. These three entities would govern watershed management activities at all levels. Not only will a

forum exist for stakeholder voices to be heard, but decision-makers will endorse activities and adopt policies while stewards implement Plan priorities on a day-to-day basis.

The following diagram summarizes possible roles and responsibilities for these governance entities, although the final results are up to the actual committees.



## Watershed Executive Agency

The Watershed Executive Agency (Agency) or Executive Committee is an entity within the public sector that creates a formal mechanism for effective action and better coordination. It would be composed of high-level state, regional and local decision-makers that set the general tone and direction for the program and help ensure the resources needed to support the program are available. The Agency would approve policy and funding decisions as a committee, then take approved action items to their individual City Councils or Boards for formal adoption and approval. The Agency would meet as needed to make decisions on recommendations from the other committees.

The purpose is to combine authorities rather than create any new ones. There are several options for how the Agency could be formed. The Agency could either be a Joint Powers Authority, which creates a new layer of government that may not appeal to some agencies. A

simpler yet still effective route could be the development of a Memorandum of Understanding, with roles and responsibilities clearly stated. Cooperating in a formal public entity would give each member the ability to think and act outside the constraints of their own organization and become a more active partner in multi-purpose projects. This would increase the region's ability to compete for public funding that is increasingly earmarked for more comprehensive, multi-purpose, and watershed-based authorities.

This Agency should be careful not to create additional layers of regulation, permitting, approval or review. All of these activities already exist within many organizations, as directed and required by a wide variety of laws. The Watershed Council, described below, will be able to deal with the issue of coordinating the review and permitting process in a more voluntary and less institutionalized way. Therefore, creating redundant review or regulatory authority here would not be the best use of limited resources and would confuse already intricate regulatory responsibilities. The Agency could be useful in this area if each member supported and facilitated regulatory coordination efforts both within their own home organization and with other regulators to create more consistent and integrated regulatory management of the watershed as a system.

Suggested members include County Board of Supervisors, City Council Members or representatives of the Council of Governments on behalf of Cities, Special District Board Members, Executive Directors of key management organizations and officials with state and federal agencies. The Chair could be either a County Supervisor or other representative with regional interests.

A few governing entities already exist in and around the watershed for river, watershed and open space planning and coordination. The County of Orange Board of Supervisors approved in concept the development of Watershed Management Areas (WMA). In its current form, the Coyote Creek Watershed would be included in the North Orange County WMA, which would also include the Westminster and Santa Ana River Watersheds. Because the Coyote Creek Watershed flows into the San Gabriel River in Los Angeles County, it may make more sense for decision-makers to collaborate with the WCA on those matters pertaining to stormwater and North Orange County issues, while maintaining ties to the North Orange County WMA. This is an issue that should be assessed by Orange County in partnership with Los Angeles County.

A list of existing related governing efforts include:

- San Gabriel River Watershed Conservation Authority Joint Powers Authority (WCA)
- Los Cerritos Wetlands Joint Powers Authority
- (Proposed) North Orange County Watershed Management Area (WMA)
- Puente Hills Landfill Native Habitat Preservation Authority JPA
- Wildlife Corridor Conservation Authority JPA
- Hillside Open Space Education Committee (HOSEC)

## Watershed Council

The Coyote Creek Watershed Council (CCWC), which played the central role in developing the watershed management plan, should also play a continuing role in implementing it. It represents the full spectrum of public, private, non-profit and community interests within the watershed. The Council should continue to meet on a regular basis to build upon and sustain the watershed-wide momentum it created during the plan development phase.

The primary task of the Coyote Creek Watershed Council will be to address and coordinate the full range of issues that impact the watershed. The Council will not only plan and coordinate individual projects, but also will focus on the strategic relationships and processes of the various stakeholders that shape these projects.

The Watershed Council representatives will usually include agency and project managers and technical staff from the involved federal, state, regional, County, and City government agencies. Participants should also include special districts such as water, sewer, utility, transportation, non-profits, homeowners associations, developers, chambers of commerce, and other interested parties. Advised by the staff, Watershed Agency and the Watershed Foundation, Watershed Council will define and prioritize the problems of the watershed and oversee implementation of the programs.

Watershed Council could include the development of annual work plans and budgets, make recommendations to the Agency for approval of projects and funding allocation, oversee program implementation, and monitor results. The Watershed Council will also be responsible for informing the stakeholders about program activities and providing stakeholder involvement during each phase of the management process. Since the Watershed Council will comprise of local government staff and officials, it can assist the program by providing practical advice on local planning needs, issues, and existing projects. The Watershed Council can help provide the political analyses that are needed for effective decision-making and implementation of projects.

Watershed programs require long-term funding to support both Plan implementation and staff operations. Whether financing is readily available or new funding sources are needed, the Watershed Council will need to develop a funding strategy to support Plan implementation. The funding strategy can include accessing revenue sources, managing the flow of funds, and recommending institutions to oversee financial planning and management for specific projects. The Watershed Council will also identify new sources of funding. It could also recommend a partnership or alliance with an outside agency or non-profit group to assist with fundraising.

There are several existing related watershed stakeholder groups. Coordinating amongst these groups may yield positive results since their efforts relate to and can enhance watershed management. The ideal forum for the watershed is still the current Coyote Creek Watershed Council because of its focus on this watershed. Water quality experts already work in the watershed, but their efforts can be enhanced by local project opportunities as identified by the Plan.

Related stakeholder groups and planning efforts include:

- Coyote Creek Watershed Council, facilitated by County of Orange
- San Gabriel River Corridor Master Plan Steering Committee, facilitated by LADPW
- Los Angeles and San Gabriel Rivers Watershed Council (non-profit)
- Coyote Creek-Lower San Gabriel River Watershed Feasibility Study, Federal Cost-Share Agreement between the County of Orange and U.S. Army Corps of Engineers
- Westminster Watershed Feasibility Study, Federal Cost-Share Agreement between the County of Orange and U.S. Army Corps of Engineers
- San Gabriel River Watershed Committee, facilitated by the Southern California Coastal Waters Research Project (water quality focus)
- Orange County NPDES General Permittees Stormwater Management Committee, facilitated by County of Orange

- San Gabriel Watershed and Mountains Special Resource Study, National Park Service

## Watershed Foundation

This Watershed Foundation will act as a steward of the watershed to implement projects and facilitate collaboration among stakeholders for efficient management of resources. Stewardship activities include financing of projects, data management, communications support, policy analysis, and educational outreach. The Foundation could operate as a non-profit to develop financial strategies to fund watershed management plan activities. The watershed foundation will be a resource to facilitate and coordinate the individual actions that add up to a beneficial relationship between the watershed's community and ecological needs.

Currently there are several individual or single purpose efforts taking place within the watershed such as Hills For Everyone and Friends of Coyote Hills to protect existing open space resources. Although these are excellent open space protection efforts, they do not necessarily implement watershed-based projects.

The entities that operate closest to a watershed foundation include:

- Los Angeles and San Gabriel Rivers Watershed Council (non-profit)
- Trails4All (development of the Coyote Creek Regional Bikeway Project)
- Southern California Coastal Waters Research Project currently provides scientific research for water quality and habitat issues in the San Gabriel River Watershed

Foundation activities, which are largely adopted from the Newport Bay Watershed Management Plan, could include:

- Technical Center of Excellence for data integration, management and dissemination, watershed modeling, monitoring, research and analysis
- Provide decision support for policy changes and land use decisions
- Development of alternative and creative financing such as redevelopment funds, Proposition 84 bond funds, Measure M or other mitigation funds, pollution trading credits, eco-technology business incubator, traditional investments or endowments
- Nurture a Citizen Task Force with a citizen participation plan

## Next Steps

Now that the Management Plan is complete, the focus needs to shift to implementation: building stakeholder support, obtaining funds, and measuring and communicating results. The key questions will be whether leadership of Plan implementation is to remain with its current institutional host, the County of Orange, or shift to another organization either public or private. Each of these options has advantages and disadvantages in regards to leading the process towards better management of watershed resources.

Next steps for the Executive Agency/Committee:

- In a bi-county committee, determine the best course of action for governance of the Coyote Creek Watershed

- Consider developing a MOU between the County of Orange and the WCA
- Consider developing a MOU that focuses on a single priority project, such as the Confluence to Coast Project
- Assess relationship between Los Angeles County side of the watershed and the proposed North Orange County Watershed Management Area
- Continue support of the Coyote Creek-Lower San Gabriel River Watershed Feasibility Study between the Corps and Counties to determine priority projects of federal interest
- Determine watershed management roles and responsibilities
- Determine priorities for the watershed, including the feasibility of the Confluence to Coast Project
- Encourage inter-department collaboration between planning, watershed management and public works departments on land use, flood and water quality issues

Next steps for the Council:

- Identify leadership entity to facilitate the Council
- Continue Coyote Creek Watershed Council and meet regularly to track progress on Corp Feasibility Study and Management Plan implementation
- Coordinate with LASGRWC and SGRMP Steering Committee
- Develop a strategic plan for the Council with a mission, goals & objectives
- Prioritize annual work plan items based on watershed management plan
- Seek funding to implement priority projects
- Coordinate with Executive Agency or Committee
- Explore funding opportunities with recent bond measures including state Proposition 84 and Orange County's Measure M among others

Next steps for the Foundation:

- Explore forming a new watershed foundation or tier off existing one such as the Los Angeles and San Gabriel Rivers Watershed Council or Trails4All
- Secure funding for projects and programs
- Integrate watershed data into one single database
- Embark on public outreach and education on watershed issues
- Periodically update the Management Plan

This Plan encourages the implementation of this three-tiered model. Some aspects of this model currently exist including a Joint Powers Authority and of course the Coyote Creek Watershed Council. However, currently there is no single non-profit or other entity committed to the Coyote Creek Watershed, although many groups are working in the watershed today. But continued efforts by dedicated individuals will undoubtedly lead to improved regional management of watershed resources.



# Chapter 5

## Expected Outcomes

During the process of developing this Plan, the question arose as to how this Plan relates to local cities. The purpose of the plan is not to supercede local government authority, but to provide guidance on future management activities such as projects, policy collaboration, data collection, and economic development. This Plan is a road map to better watershed management, not a regulatory document. Another concern about this Plan was who would be the responsible party once the process ended. This is another open-ended question that has not definite answer other than anyone who wants to take responsibility. This Plan does not attempt to identify "owners," but does identify the parties that might participate.

Now that the Plan has been laid out, it is ready for implementation. Implementation will lead to success in meeting strategic plan goals and objectives as outlined in Chapter 3. Measuring success with a plan such as this is difficult. Instead of detailed performance measures, expected outcomes are used as a measuring stick of success. These success outcomes are shown in the following table.

### a. Plan Evaluation

Two scenarios are examined, one with no Plan implementation and one with full Plan implementation. One scenario illustrates what success would look like if this Plan were to be fully implemented. Full Plan implementation includes adoption of policies, projects, programs, plans and partnerships by municipalities, developers, residents, community-based organizations and other project proponents. On the other hand, the question was asked, "What would happen if nothing were implemented?" This scenario describes opportunities lost if the status quo is maintained. Municipalities and developers continue a traditional approach to stormwater management and maintain a status quo position on land use, infrastructure and current level of parks and open space.

Plan Objectives	Project Description	'No Plan' Scenario	'Plan Fully Implemented' Scenario
Land Use/ Planning	<ul style="list-style-type: none"> <li>■ General Plan Policies</li> <li>■ Green infrastructure</li> <li>■ Mixed Use Developments</li> <li>■ Streetscapes</li> <li>■ Habitat restoration</li> <li>■ Conservation</li> <li>■ Riparian</li> <li>■ Wildlife Corridors</li> <li>■ Open Space Conservation</li> <li>■ Urban Habitat Opportunities</li> </ul>	<ul style="list-style-type: none"> <li>■ Division of land uses continues to separate people from services and jobs.</li> <li>■ Land uses favoring car over transit alternatives results in high level of impermeable surfaces (parking lots, streets, single use buildings).</li> <li>■ High levels of impermeable surfaces add to heat Island effect.</li> <li>■ Human health issues continue (obesity and asthma rates remain high) due to associated pollution, environmental impacts and sedentary lifestyles associated with low density development practices (increased automobile use/reduced recreation and walking).</li> <li>■ Open space development further degrades fragile and fragmented ecosystems and habitats.</li> </ul>	<ul style="list-style-type: none"> <li>■ Mixed use development support higher densities and improves access of people to services and jobs by alternative transit opportunities.</li> <li>■ Enhanced tree cover associated with low impact design principles reduces heat island effect and increases water harvesting and aesthetic appeal of urban environment</li> <li>■ Enhancement of pedestrian streetscape improve perception of safety and encourages use. Stimulates business opportunities and walking.</li> <li>■ Human health concerns (obesity and asthma rates) show improvement as residents experience better access to recreational opportunities.</li> <li>■ Open Space has been protected for future generations. Access to open space is improved.</li> </ul>
	Biological Resources	<ul style="list-style-type: none"> <li>■ Habitat restoration</li> <li>■ Conservation</li> <li>■ Riparian</li> <li>■ Wildlife Corridors</li> <li>■ Open Space Conservation</li> <li>■ Urban Habitat Opportunities</li> </ul>	<ul style="list-style-type: none"> <li>■ Wildlife corridors within the region are impacted; wildlife movement hindered and in some cases may be blocked off by new development in sensitive habitat areas.</li> <li>■ Wildlife populations are subsequently impacted. Species extirpations may continue in the Coyote and Puente-Chino Hills as reduction in foraging and nesting areas are developed or disrupted.</li> <li>■ Educational and experiential opportunities for beneficial human/nature interactions are lost. Reduces human understanding of nature, natural processes and environmental impacts of individual actions, reduction in stewardship.</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>■ Parks</li> <li>■ Open Space</li> <li>■ Trails</li> <li>■ Accessibility</li> <li>■ Linkages</li> <li>■ Outreach/Human Health</li> </ul>	<ul style="list-style-type: none"> <li>■ Access to open space is limited. Park to resident ratio remains below recommended level for a healthy, well served region.</li> <li>■ Access to parks remains a pressing health and economic/environmental justice issue for many areas within the watershed.</li> <li>■ Lack of investment in quality and quantity of recreational and pedestrian spaces that promote healthier lifestyles has resulted in continued high level of sedentary lifestyle and obesity rates.</li> </ul>	<ul style="list-style-type: none"> <li>■ Park to resident ratio is at or above national recommended level for a healthy and well served region.</li> <li>■ Access to green space for park-poor, previously underserved populations has been improved.</li> <li>■ Access to parks and open space should improve health statistics, reducing healthcare costs as more residents have the opportunity to live a healthier lifestyle by walking more and participating in recreational activities.</li> </ul>

Plan Objectives	Project Description	'No Plan' Scenario	'Plan Fully Implemented' Scenario
Transportation/ Traffic	<ul style="list-style-type: none"> <li>■ Transit Oriented</li> <li>■ Pedestrian Oriented</li> <li>■ Mix use Developments</li> <li>■ Accessibility</li> <li>■ Trails</li> <li>■ Linkages</li> </ul>	<ul style="list-style-type: none"> <li>■ Congestion will continue to remain an issue with the continued development of low density housing alternatives that promote car use over alternative transit opportunities that would come with mixed use and greenway developments.</li> <li>■ The mobility network remains fractured and pedestrian amenities and services are scattered and/or lacking in pedestrian amenities and level of environmental design qualities.</li> </ul>	<ul style="list-style-type: none"> <li>■ Traffic congestion can be reduced through access to transit alternatives and mixed use developments results in measurable decrease in use of cars for local trips.</li> <li>■ Greenway networks and pedestrian districts will increase as region moves to a more sustainable, mixed use, multi-modal model.</li> <li>■ Biking can become a viable option for short distance trips with the introduction of linked and safe bike paths.</li> </ul>
Water Quality	<p><b>Water Quality</b></p> <ul style="list-style-type: none"> <li>■ Treatment train wetlands</li> <li>■ Infiltration basins</li> <li>■ Site design guidelines</li> <li>■ Reduce dry weather runoff</li> </ul>	<p><b>Water Quality</b></p> <ul style="list-style-type: none"> <li>■ Water Quality may further degrade, impacting marine life and human health, as amount of impermeable surfaces increase due to development of existing open space.</li> <li>■ Pollutants may continue to impair streams and water bodies resulting in additional cost of compliance associated with increasing regulatory action (TMDL's).</li> <li>■ Costs associated with increased regulation strain limited agency budgets with no end in sight.</li> <li>■ Aquatic habitat, wetlands, and marine habitat may continue to disappear.</li> <li>■ Reduction in the ability of nature to filter polluted runoff, extirpation of aquatic species results in reduction in fisheries and continues threats to human health.</li> </ul>	<p><b>Water Quality</b></p> <ul style="list-style-type: none"> <li>■ Impermeable surface area is dramatically reduced through introduction of green infrastructure principles.</li> <li>■ Costs savings are realized as required TMDL compliance becomes a requirement of the past.</li> <li>■ Return of healthy streams and waterways improves aquatic habitat, wetlands and marine habitat.</li> <li>■ Quantity and diversity of species is improved region wide due to conservation, restoration and habitat creation efforts.</li> </ul>
Water Conservation	<ul style="list-style-type: none"> <li>■ Creek and stream restoration</li> <li>■ Green infrastructure</li> <li>■ Riparian</li> <li>■ Outreach and Education</li> </ul>	<ul style="list-style-type: none"> <li>■ Imported water demand grows with population and land use changes reduces infiltration opportunities within watershed.</li> <li>■ Supply from Colorado River and Sacramento Bay-Delta in future is vulnerable to natural and human impacts and threats.</li> <li>■ Reduced Colorado River water allocation to the region means less water available for use.</li> <li>■ Historic drought cycles may cause widespread failure of lawn and/or water dependent landscapes.</li> <li>■ Water shortages will result in higher prices and will impact economic factors.</li> </ul>	<ul style="list-style-type: none"> <li>■ Imported water reduced as infiltration sites increase and water is harvested.</li> <li>■ Water consumption used to irrigate landscapes decreases as more water-efficient landscapes are implemented.</li> <li>■ Conservation programs such as conservation, water recycling, education result in a more water savings.</li> <li>■ Be Water Wise landscape practices can significantly reduce residential and commercial water use.</li> </ul>

Plan Objectives	Project Description	'No Plan' Scenario	'Plan Fully Implemented' Scenario
<b>Sedimentation</b>	<ul style="list-style-type: none"> <li>■ Sedimentation/ Erosion Control (Floodplain, Riparian Restoration)</li> <li>■ Sedimentation Management</li> </ul>	<ul style="list-style-type: none"> <li>■ Traditional stormwater management methods continue with armoring of waterways, which results in 'hungry waters,' inviting further erosion.</li> <li>■ Costly dredging of waterways and bays continues to be required as sedimentation and erosion producing practices continue.</li> </ul>	<ul style="list-style-type: none"> <li>■ Green Infrastructure helps to reduce peak stormflows allowing for return to more natural streams in areas.</li> <li>■ Riparian and floodplain are reintroduced resulting in beneficial impacts to bank stabilization and collection of sediment upstream of bays and other sensitive water bodies. ng of waterways.</li> <li>■ Dredging of sensitive water bodies can be reduced through introduction of more naturally functioning waterways upstream.</li> <li>■ Regional Sedimentation Management is attained, resulting in balance of sediment to water.</li> </ul>
<b>Flood Control / Stormwater</b>	<p><b>Flood/Stormwater</b></p> <ul style="list-style-type: none"> <li>■ Floodplains</li> <li>■ Reduce site runoff</li> <li>■ Reduce impermeable surfaces</li> <li>■ Reduce peak flows</li> </ul>	<p><b>Flood/Stormwater</b></p> <ul style="list-style-type: none"> <li>■ Cost to repair and replace aging infrastructure in kind or using traditional single objective methods results in high replacement cost with no mitigation or alleviation of negative and pressing watershed health issues.</li> <li>■ Increasing amount of impervious surfaces will increase peak flows during storm events.</li> <li>■ Current channels are single purpose methods.</li> </ul>	<p><b>Flood/Stormwater</b></p> <ul style="list-style-type: none"> <li>■ Cost sharing offsets cost to convert to multi-objective green infrastructure methods.</li> <li>■ Peak weather flow is reduced as water is kept onsite longer during storm events.</li> <li>■ Reduces need to expand flood control channels and offers opportunities to restore natural riparian habitat in certain areas within watershed.</li> <li>■ Reduce dry weather flows and associated pollutants to near zero levels.</li> <li>■ Imported water reduced as infiltration sites increase and water is harvested.</li> <li>■ Floodplain restoration allows for multi-purpose uses including recharge, habitat, aesthetics, trails and flood control.</li> </ul>
<b>Aesthetics</b>	<ul style="list-style-type: none"> <li>■ Streetscapes</li> <li>■ Greenways</li> <li>■ Signage/way-finding</li> <li>■ Native landscapes</li> <li>■ Water-efficient landscapes</li> <li>■ Sense of place – local and regional context</li> <li>■ Site design guidelines</li> </ul>	<ul style="list-style-type: none"> <li>■ Degraded, abandon and underutilized properties remain an eyesore. Impacts perception of safety and sense of place.</li> <li>■ Scarcity of native plant habitats, including use in urban landscapes limits diversity and quantity of wildlife (birds, butterflies, lizards, etc.) within the watershed.</li> <li>■ Water dependent landscapes are vulnerable to disruptions in water supply.</li> <li>■ Varying quality levels of streetscapes within watershed leads to disparate perceptions of 'sense of place' and safety from area to area.</li> <li>■ Backs turned to creeks, viewed as ugly and unwanted.</li> </ul>	<ul style="list-style-type: none"> <li>■ Improved quality of public spaces through design, amenities and landscape.</li> <li>■ Landscapes are more resilient to drought through use o f native plant associations, they better reflect their environments context and they attract native wildlife, which further enhances the aesthetic experience.</li> <li>■ Quality streetscapes enhance 'an authentic, indigenous 'sense of place' and result in beneficial impacts to perception of place and safety. Improves economic performance and human health.</li> <li>■ Quality spaces including greenways improve pride in community and pride of ownership of adjacent uses.</li> </ul>

Plan Objectives	Project Description	'No Plan' Scenario	'Plan Fully Implemented' Scenario
Air Quality / Health	<ul style="list-style-type: none"> <li>■ Parks</li> <li>■ Open Space</li> <li>■ Increase in Tree Cover</li> <li>■ Pedestrian Oriented streetscapes</li> <li>■ Reduce Impermeable Surfaces</li> <li>■ Mixed Use Developments</li> <li>■ Reduction in car trips</li> </ul>	<ul style="list-style-type: none"> <li>■ Development of remaining open space results in additional daily car trips leading to increases in emissions.</li> <li>■ Typical low density suburban sprawl design results in continued dependence on car for local/daily-use trips vs. use of alternatives – keeps emissions high in region.</li> <li>■ Deposition from polluted air continues to worsen water quality.</li> </ul>	<ul style="list-style-type: none"> <li>■ Conservation of existing open space maintains plant cover and doesn't add additional car trips.</li> <li>■ High density and infill development supported by transit reduces individual car use through lifestyle change.</li> <li>■ Increased Tree and shrub cover provides air and water quality benefits.</li> <li>■ Health benefits associated with improved air quality is potentially achieved. Reduction in asthma rates and other afflictions associated with poor air quality.</li> <li>■ Trees store carbon which helps reduce global warming.</li> </ul>

## b. Conclusion

This Plan was written primarily for people who work in the Coyote Creek Watershed. It is a call to action for City and County public works, planning, parks and redevelopment staff. This Plan asks municipal staff and elected officials to question the status quo and explore more creative, multi-purpose approaches to designing our communities. Developers can also benefit from this plan. The Plan is meant to be a catalyst for changing over to a greener infrastructure. Green infrastructure addresses some of the root causes of water quality and quantity problems including single-purpose land use and stormwater infrastructure design. By investigating the root causes of problems in the watershed, long-term watershed health can be realized over time.

The Plan is a living document that begins the process of transitioning the way urban landscapes are developed and stormwater is managed to a more flexible and proactive regionally-based management approach. This Plan has no enforcement "teeth." Rather, it is a call to (voluntary) action by public agencies, developers, and even individual homeowners to do things differently in the future, for the health and benefit of future generations.

Over a million people live and play in the watershed. A final anticipated outcome is that every individual and their community discover ways to connect with the Coyote Creek Watershed through suggested action items in this Plan. Whether it's through exploration of the creeks, supporting green redevelopment projects at public meetings, replacing turf with native gardens at home, building butterfly gardens at the local school, we all live, work and play in a watershed. People who learn about their watershed will be more likely to steward its resources. There is no better outcome for this and any watershed management plan.



# Appendices

- A. Coyote Creek Watershed Council Meeting Summaries
- B. Existing Conditions Technical Memorandum
- C. Who's Who in Watershed Management Technical Memorandum
- D. Opportunities and Constraints Analysis Technical Memorandum
- E. Project Opportunities Location Matrix
- F. General Plan Policy Strategies Technical Memorandum
- G. Green Infrastructure Site Design Guidelines Fact Sheets
- H. Habitat Restoration Master Plan and Focal Species Assessment
- I. Analysis of Potential Environmental Factors Technical Memorandum
- J. "Seeing Green: Grounds for a Renewed Urban Infrastructure", 606 Studio
- K. Green Infrastructure Resources