

# 1. BACKGROUND

## A. INTRODUCTION

This document is a Watershed and Open Space Plan for the San Gabriel and Los Angeles Rivers watersheds. A natural planning boundary, a watershed is the area drained by a single river and its tributaries. This plan addresses the linked watersheds of the San Gabriel and Los Angeles Rivers, which together drain 1,513 square miles from the San Gabriel Mountains to the Pacific Ocean, an area in which more than 7 million people currently live.

Transformation of the land along the San Gabriel and Los Angeles Rivers began with the arrival of settlers in the 18th Century. Densely vegetated wildlands were cleared, irrigated, and planted with grains and vegetables to feed the settlers. The arrival of the railroads and imported water facilitated a second transformation: the patchwork of farmland grew into a major urban metropolis. A third transformation is now possible. A network of open spaces, anchored by parkways along the rivers, can link sustainable communities together with trails, bike paths, and landscaped areas.

In recent years, cities, communities, groups, and agencies have worked to improve and expand open space, optimize water resources, preserve habitat, and create a network of trails and bike paths. Some of these efforts have been informally coordinated, in recognition of the potential to extend benefits beyond the borders of individual cities, create opportunities to leverage benefits, and maximize funding resources. This plan builds upon more than a decade of work and seeks to encourage broader participation in watershed planning. The concepts in this plan are intended to support and inform ongoing planning efforts, as well as provide a framework to plan future projects that are consistent with a regional vision to restore balance between human and natural systems in the watersheds.

The central element of this plan is a set of Guiding Principles intended to be used to plan and implement projects that will help restore balance to the watershed. More detailed plans at the subwatershed and local levels will be necessary to determine where specific improvements will occur. As a result, the

vision of the future articulated in this document may require decades to be realized. But if cities, communities, private groups, and agencies work and plan together, the watersheds will grow greener, waters will be enhanced, and a healthier balance between human and natural systems can be achieved.

This plan utilizes information gathered in a study conducted by the Leo J. Shapiro & Associates (LJS), which studied public perceptions of, and priorities for, open space planning. The maps in this plan are primarily derived from the Geographic Information Systems database developed by Forma Systems for the RMC.

This document is organized in three major sections: (1) Background, which provides the context for the plan; (2) Current Conditions, which provides a description of the watersheds; and (3) a Vision for the Future, which contains the Guiding Principles and discussions of strategies, opportunities, next steps and subsequent plans.

## B. HISTORICAL CONTEXT

Over millions of years, the San Gabriel and Los Angeles Rivers emerged from the San Gabriel Mountains and meandered towards the Pacific Ocean. As the mountains rose, they captured more rainfall, and the power of the rivers increased. Because of the steep slopes and rocky soils in the mountains, the rivers carried large amounts of sand, gravel, and rocks. Much of the water in the rivers disappeared into the sand and replenished groundwater. Due to low surface flow most of the year, the rivers appeared as meandering streams within wide beds. But when winter rains arrived, these “streams” often jumped their banks, changed course, and flowed over the land.

With abundant groundwater and the ever-changing course of the rivers, the lands along the rivers were heavily vegetated with dense stands of native trees, roses, grapes, and shrubs. Wetlands, marshes, and springs dotted the landscape. Habitats were diverse and wildlife was plentiful. The abundant water, vegetation, and wildlife supported a significant population of indigenous peoples such as the Chumash and Tongva (Gabrielino).

The earliest Spanish explorers noted the dense vegetation and the presence of surface water. The confluence of the Arroyo Seco and the Los Angeles River was noted as especially verdant. Because water was available, the *Mision San Gabriel de Arcángelo* was founded in 1771, followed in 1781 by *El Pueblo de Nuestra Señora la Reina de los Angeles de Porciuncula* (which became the City of Los Angeles).

The arrival of settlers in the 18<sup>th</sup> Century began the first human-induced transformation of the double watershed. The dense vegetation surrounding the rivers was cleared to make way for farms and villages. The abundant water and favorable climate created ideal conditions for a variety of crops. Within a short time, the area became the center of agricultural production in Southern California. In little more than a century, the landscape along the rivers had changed significantly as floodplain became highly productive farmlands.



**Los Angeles in 1871**

From the beginning, water was diverted from the rivers for people, livestock, and crops. Before long, because so much water was diverted, the rivers no longer reached the ocean. Increased opportunities for trade—and a growing population—increased the demand for farmland and water, and the water on the surface of rivers became inadequate to meet demand. Wells were dug to reach groundwater, and groundwater levels slowly began to drop at some locations.

During this first transformation from wildlands to farmlands, proximity to the river was important. But easy access to water was coupled with danger when winter rains swelled the rivers or changed their course. The population lacked the knowledge and the means to control the rivers. Dikes and dams were often washed away by winter floods.

The arrival of the transcontinental railroads in 1876 provided access to distant markets, and agricultural production expanded greatly. The railroads also brought more people eager to share in the dream made possible by abundant sunshine, farmland, water, and business opportunities. Farmland was subdivided and homes built. The influx of people continued. Surface and groundwater sources were in high demand, and groundwater tables began to drop throughout the area. The plentiful wetlands and marshes began to disappear. Areas that were once dense with vegetation became dry grasslands. Occasional droughts became a major concern as residents, farmers, and businesses competed for the limited water supply.



**San Gabriel in 1893**

Because the population began to exceed available water resources, in 1913 the Los Angeles—Owens River Aqueduct was built, importing water from great distances. More and more farmland was subdivided and converted to commercial and residential uses. Once-distant farm communities began to grow towards each other. The once-vast open spaces began to disappear. Urban sprawl covered the lowlands and spread into the valleys and hillsides. The second transformation of the watershed, from farming communities to urban metropolis was just as swift as the first transformation.

During this second transformation, from farmland to urban metropolis, proximity to the river was less critical, but the danger from floods remained. Instead of crops and livestock, homes, businesses and lives were lost. A variety of measures were employed to keep the rivers in their channels (or the then-current channels), but natural forces always prevailed. After two significant floods in the 1930s, the federal government worked with the Los Angeles County Flood Control District to implement a

flood control plan with three major components: (1) channelize, straighten, and deepen the rivers; (2) install debris basins in foothills to protect against debris flows during storm events; and (3) construct dams in the mountains to impound storm runoff and permit controlled release of those waters. The Los Angeles River was encased in concrete for most of its length, and the San Gabriel River was surrounded by levees. The system protects lives and property from flooding and speeds discharge of floodwaters into the Pacific Ocean.



**Los Angeles River south of Downtown**

The potential for a third transformation of the watersheds has emerged in the past decade, beginning with visions of “restoring” the Los Angeles River and implementing watershed management strategies. Individuals, groups, agencies, communities, and cities have developed plans to expand natural spaces along the river, establish riverfront walks or bike paths, and restore public access. These concepts have been expanded to include the San Gabriel River, as well as tributaries of both rivers, and planning on these issues is ongoing. This plan is an outgrowth of those efforts, seeks to codify and extend upon those concepts, and provide a framework for future planning by expanding the concept of restoration from the rivers to the entire watershed.

### C. PLANNING CONTEXT

During the first transformation of the watersheds, planning focused on meeting the demand for water: first with surface supplies, then groundwater. During the second transformation, once water was imported from distant sources, the focus shifted to protecting farms, homes, and businesses from flooding. To achieve a third transformation of the

watersheds, planning must focus on natural systems and open space.

A watershed is the area drained by a single river and its tributaries. Despite this clear spatial identity, watersheds are not the only natural planning boundary. Groundwater basins cross under watersheds, and forest ecosystems fold over ridgelines. Political and jurisdictional boundaries in the region add complexity. A sound ecological approach to planning must consider the relationships between human and natural systems, overlapping physical and biological systems, and social, economic, and political systems. And since imported water is an important element of Southern California’s water supply, management of the watersheds of the San Gabriel and Los Angeles Rivers will impact remote watersheds. Actions taken in the upper and middle portions of the watershed impact the downstream areas and oceans.

Planning at watershed and subwatershed scales necessarily involves consideration of the entire water cycle, both above and below the ground. This includes the intertwined concerns of flood protection, water resources, water quality, protection and enhancement of habitat, open space for passive and active recreation, and strategies to encourage sustainable future development.

Watershed planning makes clear the interconnections between our mountainous upstream reaches and our downstream cities and beaches.

To understand the context for this plan, it is useful to provide an historical overview of some relevant plans and planning concepts related to open space in the double watershed.

In 1911, Los Angeles City Park Commissioners proposed a river parkway (that was never built) between Griffith Park and Elysian Park that would have connected with the Arroyo Seco Parkway (that was built, but without many of its originally proposed features). Other plans or concepts for parks along the rivers were developed, but none were implemented prior to the start of the major flood control projects that began in the 1930s.

The most significant and far-reaching of the early open space plans in the double watershed was proposed in 1930, by the team of Olmsted Brothers and Harland Bartholomew and Associates, who

together had developed master plans for the Los Angeles County highway system and a state park system. The Olmsted-Bartholomew plan, entitled *Parks, Playgrounds and Beaches for the Los Angeles Region*, recommended a network of parkways to connect the mountains, rivers, parks, and beaches. Parkway along the river were intended to reduce the need for structural flood protection features. To remedy the deficit of park space (that existed in 1930), the plan proposed a total of 71,000 acres of parkland south of the San Gabriel Mountains. Unfortunately, due to timing (at the start of the Great Depression), cost (\$231 million at that time), and other issues, the Olmsted-Bartholomew plan was shelved and largely forgotten for many years. The centerpiece of that plan, a network of open spaces connected by parkways, remains the path not taken.



**Los Angeles River west of Sepulveda Dam**

The Santa Monica Mountains National Recreation Area was formed in 1977. The National Park Service worked with the State of California to create a Santa Monica Mountains Comprehensive Plan, which was adopted in 1979. This led to the formation of the Santa Monica Mountains Conservancy in order to acquire lands for the Santa Monica Mountains ecosystem.

In 1980, the U.S. Army Corps of Engineers commissioned a study on recreational potential of drainage facilities on the major tributaries of the Los Angeles and San Gabriel Rivers (*LACDA System Recreation Study*, U.S. Army Corps of Engineers and DMJM, 1980), which identified opportunities for trails, linear parks, riparian areas, nature study facilities, and other passive and active recreational opportunities. In 1983, the territorial jurisdiction of the SMMC was expanded to include portions of Ventura County and portions of the western Los

Angeles River watershed, and in 1990 the Rim of the Valley Trail Corridor Master Plan was adopted. In 1990, the Nature Conservancy published the *Critical Wildlife/Habitat Linkage Areas Between the Santa Susana Mountains, Simi Hills, and Santa Monica Mountains*, which identified the critical choke points for wildlife movement between those mountain ranges and the relationship to preservation of biodiversity.

In 1993, the California Coastal Conservancy completed a *Los Angeles River Park and Recreation Study* to explore beneficial uses of the river, including an assessment of the river's potential for recreation and wildlife enhancement. In 1994, the Los Angeles Regional Water Quality Control Board updated its *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. This plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters.

In 1996, Los Angeles County adopted a Master Plan for the Los Angeles River, which "...provides for the optimization and enhancement of aesthetic, recreational, flood control and environmental values by creating a community resource, enriching the quality of life for residents and recognizing the river's primary purpose for flood control" (*Los Angeles River Master Plan*, Los Angeles County Department of Public Works, 1996). The plan incorporated substantial stakeholder input and recommended environmental restoration, new trails and connections to existing trails, tree plantings, signage, murals, and economic development opportunities. A follow-on project, the development of landscape standards and guidelines, is currently underway.

In 1997, the Cal Poly Pomona 606 Design Studio completed a plan titled: *Puente Hills Corridor: Greenspace Connectivity for Wildlife and People..* This report explored the recreational and habitat preservation planning issues for the Puente Hills from Whittier Narrows to the Cleveland National Forest.

In 2000, the California Coastal Conservancy documented current wetland resources in a report entitled *Wetlands of the Los Angeles River Watershed*, which identified ten sites that have potential for near-term restoration, including De Forest Park (Long Beach), Victoria Park (Torrance), Harbor

Park (San Pedro), Dominguez Gap (Long Beach), Hazard Park (Los Angeles), Taylor Yard (Los Angeles), Lower Arroyo Park (Pasadena), Cahuenga Spreading Grounds (Glendale), Sepulveda Basin (Van Nuys), and Upper Bull Creek (San Fernando).

Also in 2000, Cal Poly Pomona graduate students developed a plan for regional planning of urban wildlife movement networks in the San Gabriel Valley (*Reconnecting the San Gabriel Valley: A Planning Approach for the Creation of Interconnected Urban Wildlife Corridor Networks*, California Polytechnic University, Pomona, 2000). Although the primary purpose was to delineate a planning process to connect wildlife habitats, the plan also identified specific opportunities for improvements along the edges of the San Gabriel River.



**Confluence of the Arroyo Seco  
and the Los Angeles River**

The Southern California Studies Center of the University of Southern California published *Sprawl Hits the Wall* (2001), proposing a region-wide approach for a sustainable approach to development. The report recommends that the region grow “Smarter,” “Together,” “Greener,” and “More Civic Minded.”

Funded by the California Coastal Conservancy with support from the SMMC, the *Arroyo Seco Watershed Restoration Feasibility Study* (North East Trees and Arroyo Seco Foundation, June 2001) addresses flood and stream management, habitat restoration, water resources, and recreational opportunities along one of the main tributaries of the Los Angeles River. The goal is to restore the watercourse from its origins in the San Gabriel Mountains to its confluence with the Los Angeles River near Elysian Park.

The Los Angeles County Department of Public Works completed a *Los Angeles River Bikeway Study* (June 2001), to address how to overcome the physical obstacles that impede the course of the Los Angeles River bikeway from downtown Los Angeles, past Union Station, the Arroyo Seco, the Los Angeles River Center and into the west San Fernando Valley.

A consortium of groups and agencies, including the South Coast Wildlands Project, the Nature Conservancy of California, the California Wilderness Coalition, the Biological Resources Division of the U.S. Geological Survey, and the Center for Reproduction of Endangered Species of the Zoological Society of San Diego, jointly developed *Missing Linkages: Restoring Connectivity to the California Landscape* (August 2001). This report identified more than 300 existing and former wildlife corridors throughout California that are vital habitat linkages for species diversity. The report identifies several important wildlife linkages in the San Gabriel and Los Angeles watersheds.

Several other plans are currently underway, or are proposed to begin shortly, including:

#### ■ **Los Angeles and San Gabriel Rivers Watershed Feasibility Study**

The U.S. Army Corps of Engineers and Los Angeles County Department of Public Works have collected Geographic Information Systems data on the watersheds. The goal of the study is to be able to identify potential opportunities related to improving recreation, land use and habitat management, water conservation, flood quality and flood management and to develop a framework for a future integrated basin management plan for the Los Angeles and San Gabriel River watersheds.

#### ■ **San Gabriel River Master Plan**

In 1999, Los Angeles County began the development of a master plan for the San Gabriel River, from the County-controlled dams and reservoirs in the San Gabriel Mountains to the river’s outlet at the Pacific Ocean. The consensus-driven master plan process will identify project opportunities for recreation, open space, and habitat enhancements, maintenance of flood protection, preservation of natural resources, and maintenance of existing water

rights. Completion of the plan is scheduled for 2003.

■ **Forest Plan Update—Angeles, Cleveland, Los Padres, and San Bernardino National Forests**

The U.S. Forest Service is in the process of updating its management plan for the Southern California National Forests including the Angeles, Cleveland, Los Padres, and San Bernardino National Forests. The elements of the plan are wilderness areas, timber management, range allotments, recreational options, and land acquisition. Completion of the plan and the required environmental documentation is scheduled for December 2003.

■ **San Gabriel River and Rio Hondo Spreading Grounds Enhancements**

The Los Angeles County Department of Public Works is working with the City of Pico Rivera to provide public access, create recreation opportunities, and improve the appearance of the existing spreading grounds (used to recharge groundwater) along the San Gabriel and Rio Hondo Rivers. This plan is intended as a prototype for multi-objective projects in the region.

■ **Sun Valley Watershed Management Plan**

The Los Angeles County Department of Public Works is developing a plan to address chronic flooding in the Sun Valley subwatershed. The plan proposes to develop multi-objective solutions to flooding, increase groundwater recharge, reduce stormwater pollution, and provide recreational opportunities. The project is intended to attract multiple funding partners, educate and motivate the local community to embrace these solutions, and provide a model for future watershed management projects throughout Los Angeles County.

■ **Subwatershed Plans**

The State Water Resources Control Board has funded subwatershed plans for Compton Creek, Coyote Creek, Rio Hondo, and the Upper San Gabriel River (including Walnut and San Jose Creeks), which are anticipated to begin in late 2001. In addition, the second phase of the Arroyo Seco Watershed Restoration Feasibility Study, has been funded by the SMMC and the California Coastal Conservancy.