



**EXISTING CONDITIONS**

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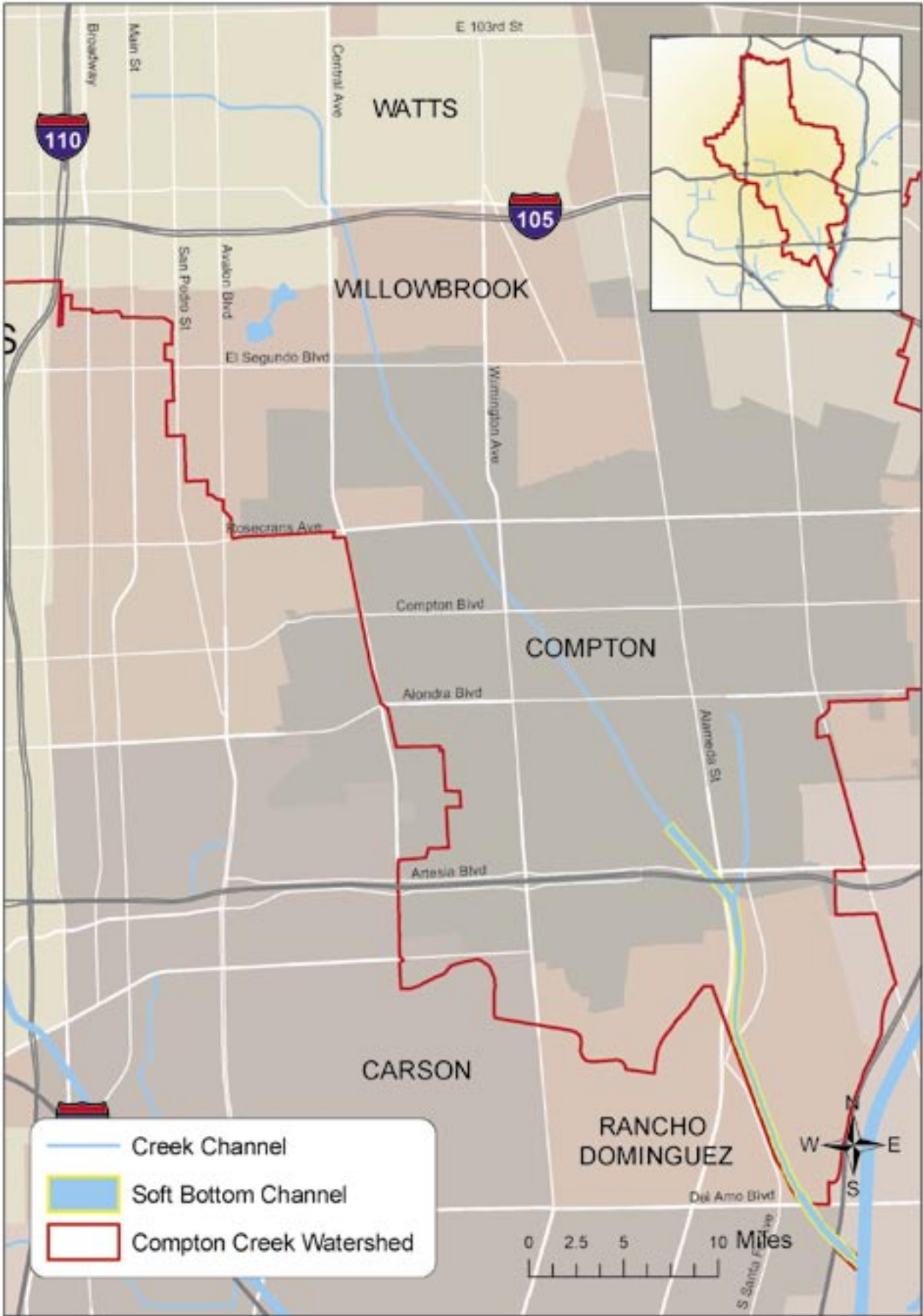
## 2. EXISTING CONDITIONS

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### A. SETTING

#### 1. Location

Compton Creek, a tributary to the Los Angeles River, drains a watershed of approximately 42.1 square miles (or just under 27,000 acres) located generally between Los Angeles and Long Beach in Los Angeles County. The creek channel begins at the convergence of several underground storm drains in the City of Los Angeles at Main Street between 107th and 108<sup>th</sup>. The creek flows generally south through a 5.8-mile channel reach with a concrete bottom and vertical sides. Just north of the 91 Freeway in Compton, the channel widens, with a natural earthen bottom and armored trapezoidal sides, which extends approximately 2.7-miles to just above the confluence with the Los Angeles River. In this earthen-bottom portion, vegetation is present in the channel bottom.



**Figure 2-1 Compton Creek Channel**  
Source: Los Angeles & San Gabriel Rivers Watershed Council

EXISTING CONDITIONS

**2. Political Jurisdictions**

The Watershed includes most of the City of Compton, portions of the cities of Los Angeles, Lynwood, and South Gate, portions of the unincorporated Los Angeles County communities of Athens, East Rancho Dominguez, Florence-Firestone, Rosewood, Walnut Park, and Willowbrook, and very small portions of the cities of Carson, Huntington Park and Long Beach (refer to Figure ES-1 in the Executive Summary). A breakdown of area by jurisdiction is given in Table 2-1.

**Table 2-1 Jurisdictions within the Compton Creek Watershed**

<i>Jurisdiction</i>	<i>Area (Acres)</i>	<i>Area (Miles<sup>2</sup>)</i>	<i>% of Total</i>
City of Los Angeles	10,585.8	16.5	39.3
County of Los Angeles	6,236.3	9.7	23.2
City of Compton	5,686.5	8.9	21.1
City of South Gate	2,254.2	3.5	8.4
City of Lynwood	1,795.5	2.8	6.7
City of Long Beach	194.0	0.3	0.7
City of Carson	123.7	0.2	0.5
City of Huntington Park	44.8	0.1	0.2
Total	26,920.8	42.1	100.0

Source: Southern California Association of Governments 2000 Land Use Data

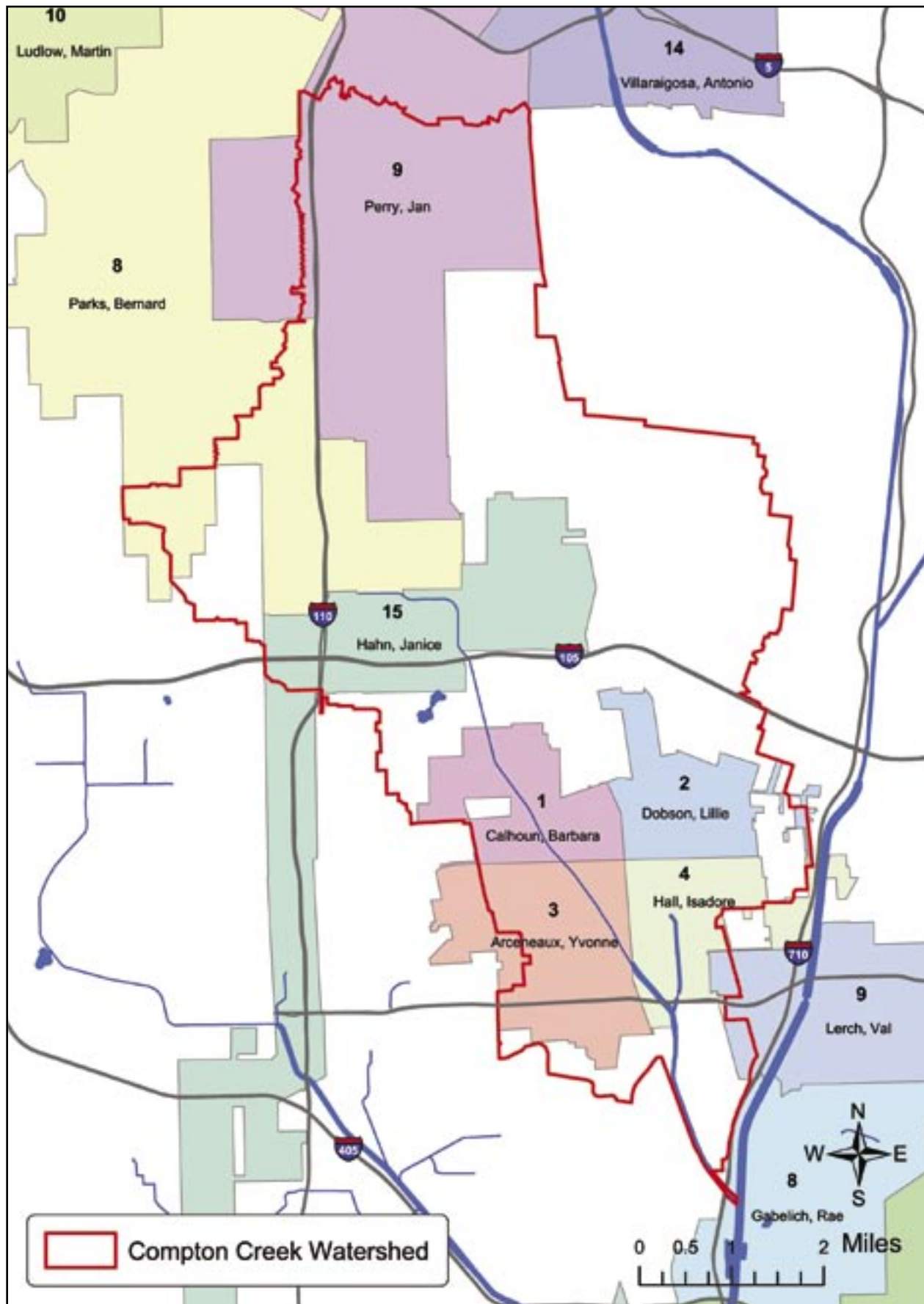
The cities of South Gate, Lynwood, Carson, and Huntington Park have at large City Councils (without defined districts assigned to Council members), while the cities of Los Angeles, Compton and Long Beach have City Council Districts. All four Compton City Council Districts lie mostly within in the Watershed. Portions of three Los Angeles City Council Districts (nos. 8, 9, and 15) and small portions of two Long Beach City Council Districts (nos. 8 and 9) also lie within the watershed (Figure 2-2A). Three County Supervisory Districts are represented (Nos. 1, 2, and 4, refer to Figure 2-2B). At the state level, six Senate Districts (nos. 22, 25, 26, 27, 28 and 30, refer to Figure 2-2C), and six Assembly Districts (nos. 46, 48, 50, 51, 52 and 55, refer to Figure 2-2D) lie within the Watershed. At the federal level, five Congressional Districts represent the Watershed (nos. 31, 34, 35, 37, and 39, refer to Figure 2-2E).

The Watershed is also within the territory of the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (Rivers and Mountains Conservancy or “RMC”). The RMC was created by the California legislature in 1999 to preserve open space and habitat in order to provide for low-impact recreation and educational uses, wildlife habitat restoration and protection, and watershed improvements. The RMC completed a Parkway and Open Space Plan (*Common Ground, from the Mountains to the Sea*) to guide the conservancy’s activities and has developed grant program to distribute and administer bond funds in accordance with the plan. Funding for the grant program has come largely from Propositions 12, 40, and 50. The conservancy’s territory is shown on Figure 2-3. In addition, the California Coastal Conservancy plays a role in the Watershed through its efforts to protect and restore fish and wildlife habitats and to develop coastal and riverside trails.

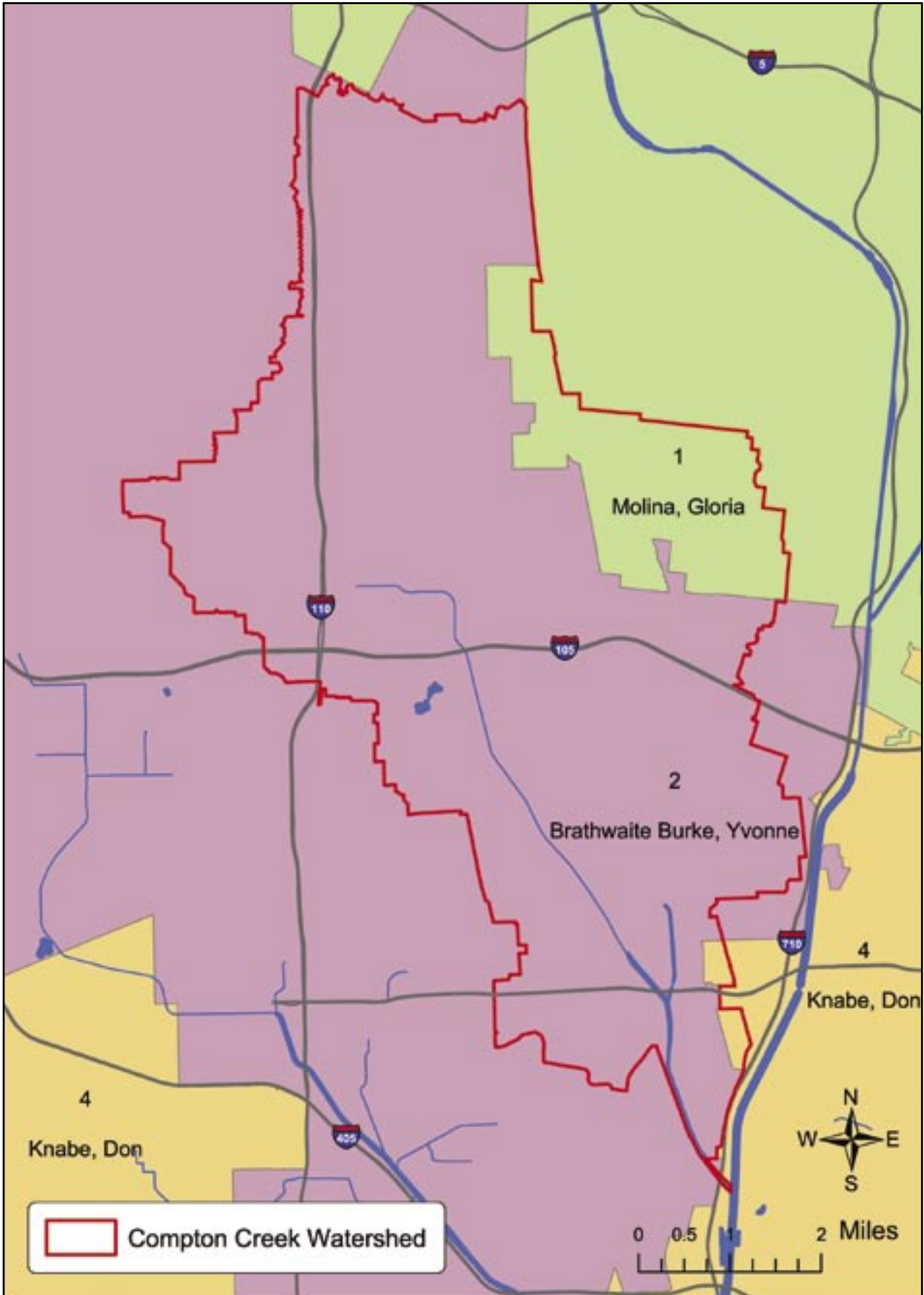
**B. PHYSICAL CONDITIONS**

**1. Climate**

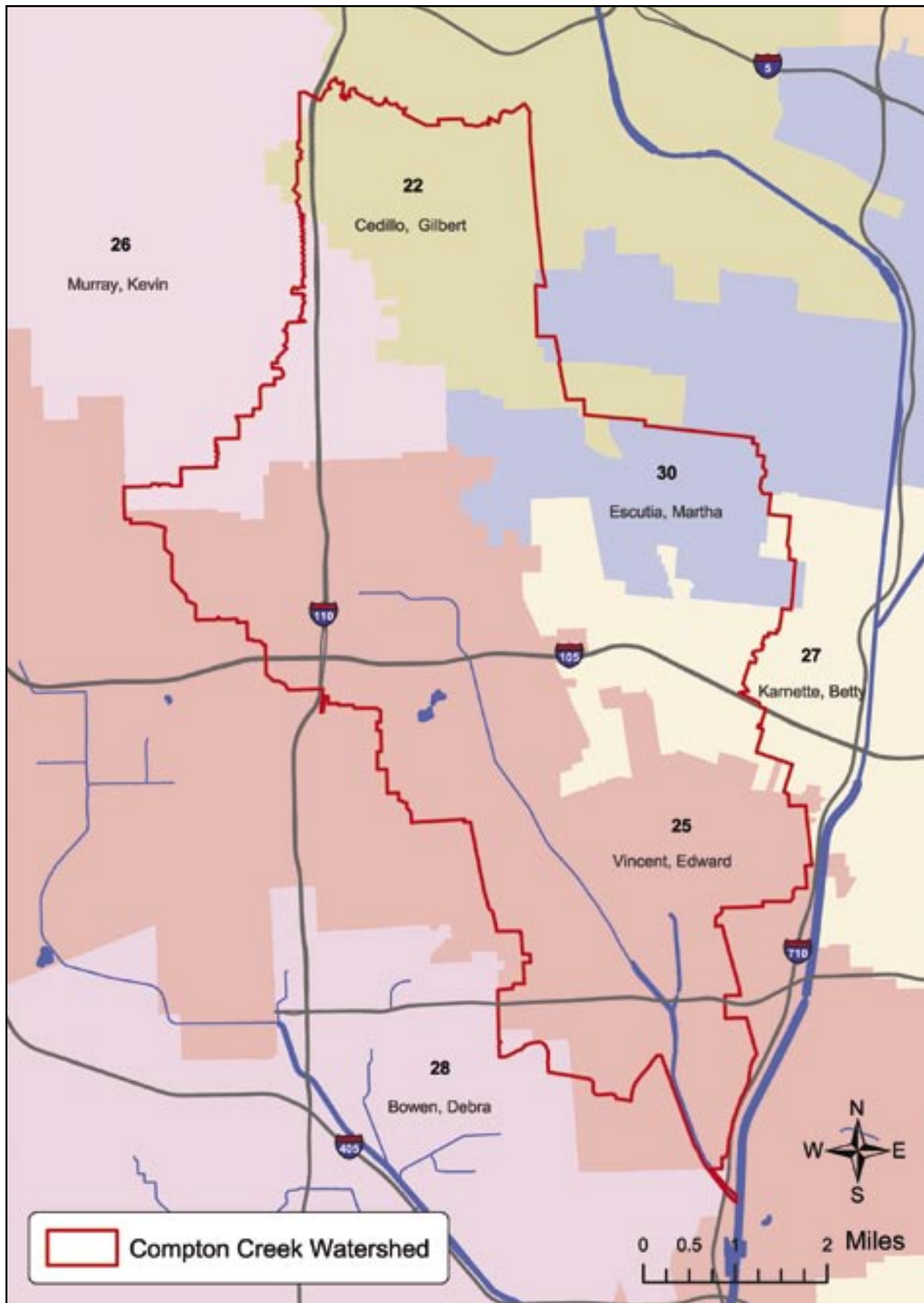
The Watershed has a Mediterranean climate, with modest temperature variations, rainy winters, and dry summers. Although a complete climate station is not located within the Watershed, stations are located at nearby airports both southeast and west of the watershed (Long Beach and Torrance, respectively). These station locations share similar topography and are relatively close to the Watershed and thus provide representative data for the Watershed.



**Figure 2-2A City Council Districts**  
Source: Los Angeles & San Gabriel Rivers Watershed Council

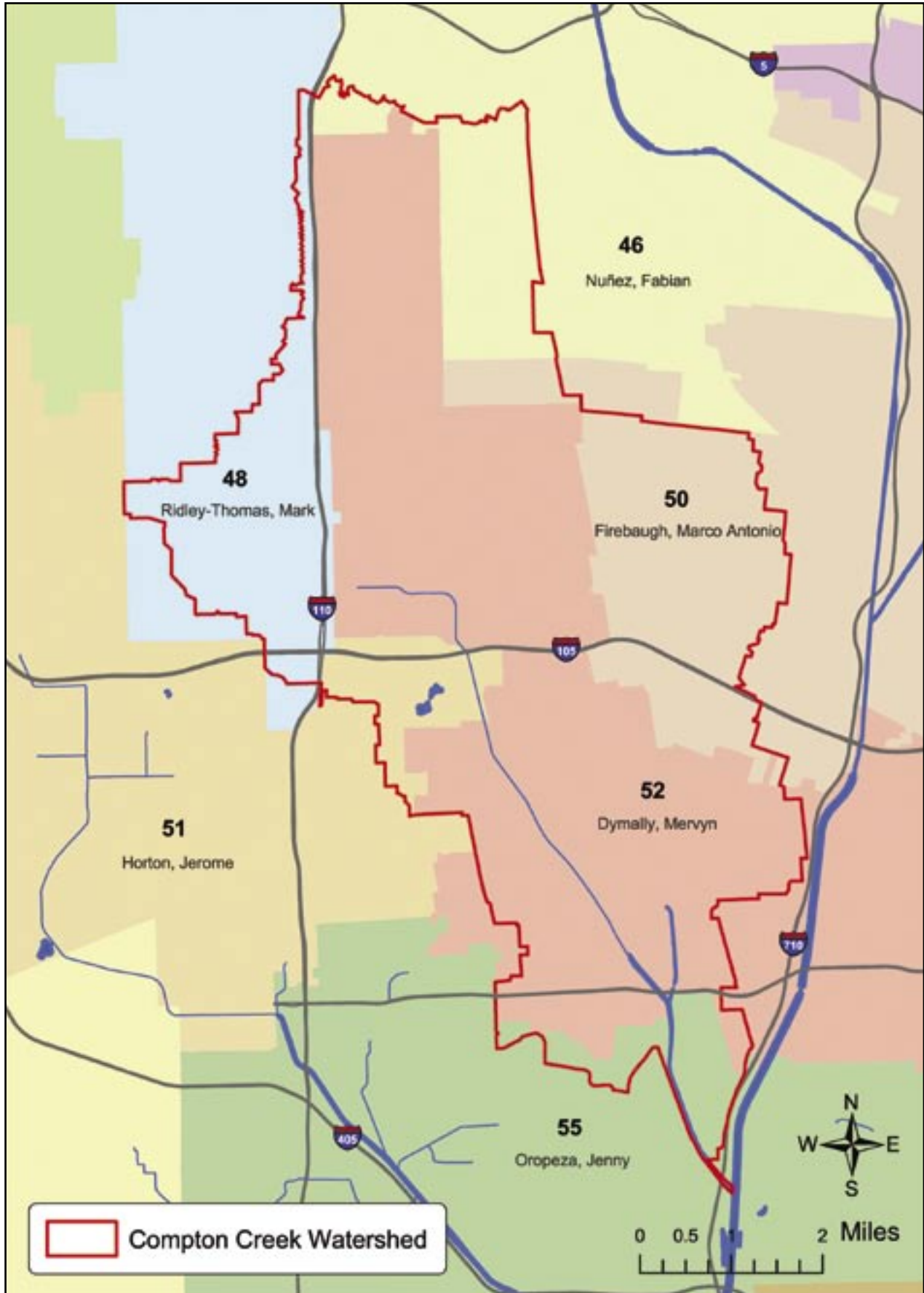


**Figure 2-2B County Supervisory Districts**  
Source: Los Angeles & San Gabriel Rivers Watershed Council



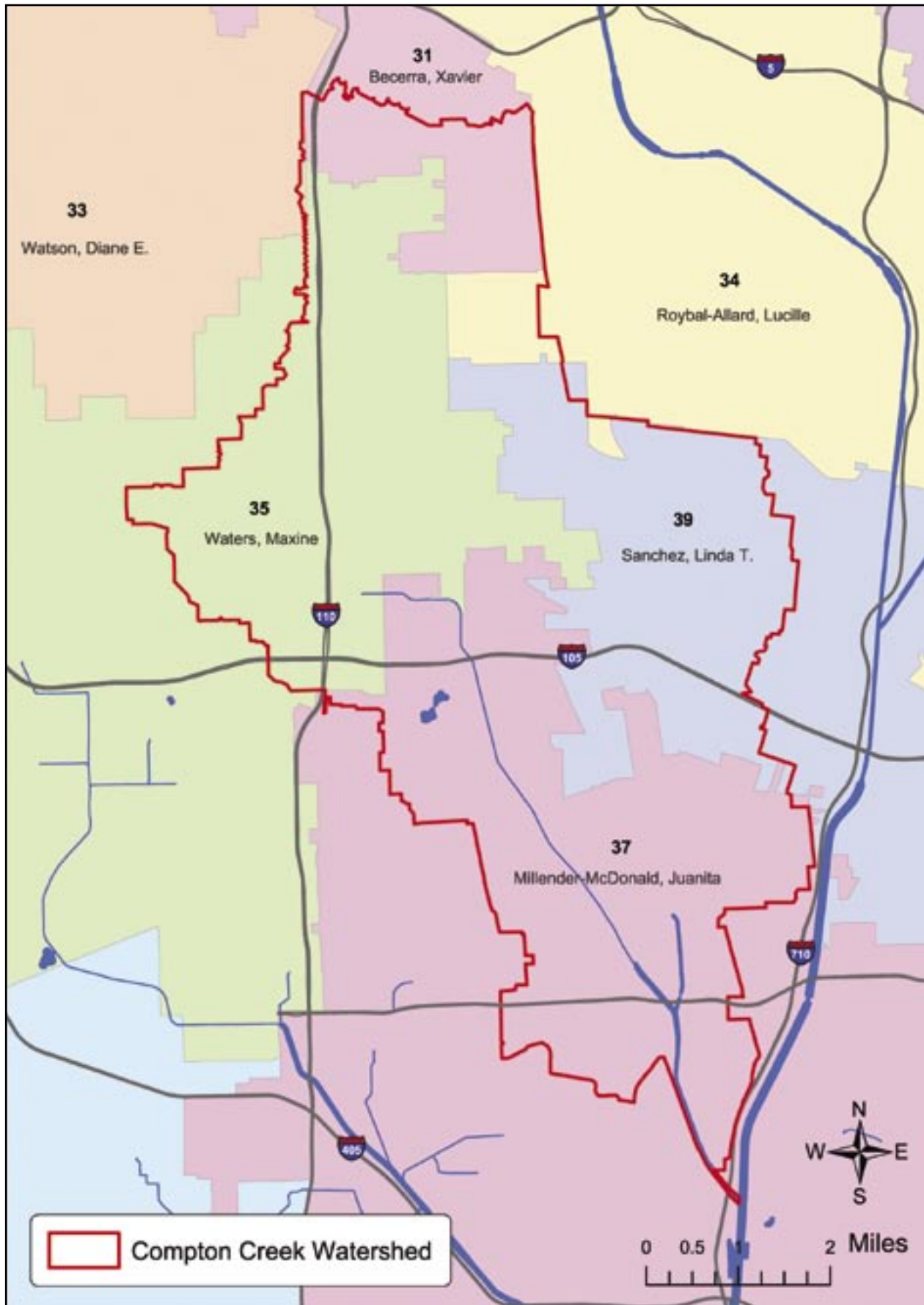
**Figure 2-2C State Senate Districts**

Source: Los Angeles & San Gabriel Rivers Watershed Council



**Figure 2-2D State Assembly Districts**

Source: Los Angeles & San Gabriel Rivers Watershed Council



**Figure 2-2E U.S. Congressional Districts**  
Source: Los Angeles & San Gabriel Rivers Watershed Council



**Figure 2-3 State Conservancies in Southern California**

Source: Los Angeles & San Gabriel Rivers Watershed Council

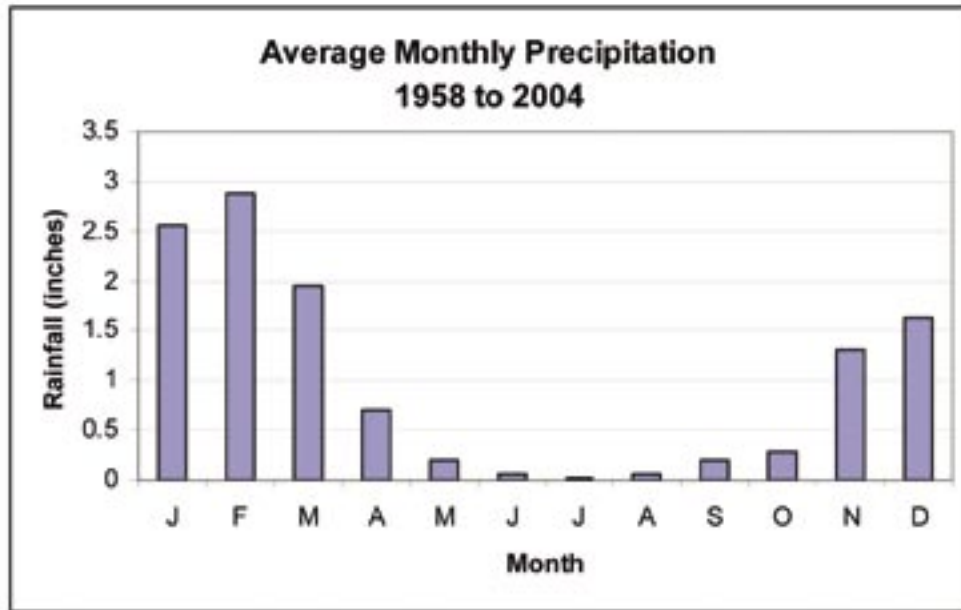
Average temperatures range from 65–84°F in the peak of summer, to 45–67°F in the winter. As with the entire Los Angeles Basin, nearly all of the rain that falls in the Watershed occurs between November 1st and April 30th when Pacific storms from the northwest push cold fronts across the basin (Table 2-2). On average, rainfall totals are less than twelve inches per year. Annual rainfall totals

vary considerably however, ranging from a low of 2.68 inches in 2002 to a high of 27.6 inches in 1978. The monthly variation in precipitation is depicted in Figure 2-4. Based on long-term rainfall records, there are on average only 37 days per year where rainfall totals reach 0.10” or more.

**Table 2-2 Average Monthly Temperature(°F) and Precipitation (Inches) in Long Beach (1958 to 2004)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temp	66.9	67.3	68.4	71.8	73.6	77.1	82.4	84.0	82.4	78.2	72.2	67.2	74.3
Average Min. Temp	45.5	47.3	49.7	52.3	56.7	60.2	63.6	64.9	62.9	58.0	50.4	45.2	54.7
Average Total Rainfall	2.56	2.87	1.96	0.70	0.20	0.07	0.02	0.07	0.20	0.28	1.30	1.62	11.86

Source: Western Regional Climate Center



**Figure 2-4 Average Monthly Precipitation**

Source: Western Regional Climate Center

## 2. Topography

Because the Watershed is located in the Coastal Plain, it is relatively flat throughout its area. Generally, elevation decreases from North to South and West to East within the watershed. The high point at the northern boundary of the watershed is approximately 200 feet above sea level, while the low point at the southern boundary is approximately forty feet. From west to east, elevation ranges from 215 feet to 120 feet. A ridge exists along the southwestern boundary as a result of the Newport-Inglewood Fault.

The elevation at the headwaters of Compton Creek, where the stream begins to flow out of the storm drains to the channel, is 118 feet. The elevation at the mouth, where it flows into the Los Angeles River, is 20 feet. Thus, there is a 98-foot change of elevation from the headwaters to the mouth of the creek, representing an average gradient of 0.22 percent.

## 3. Geology and Soils

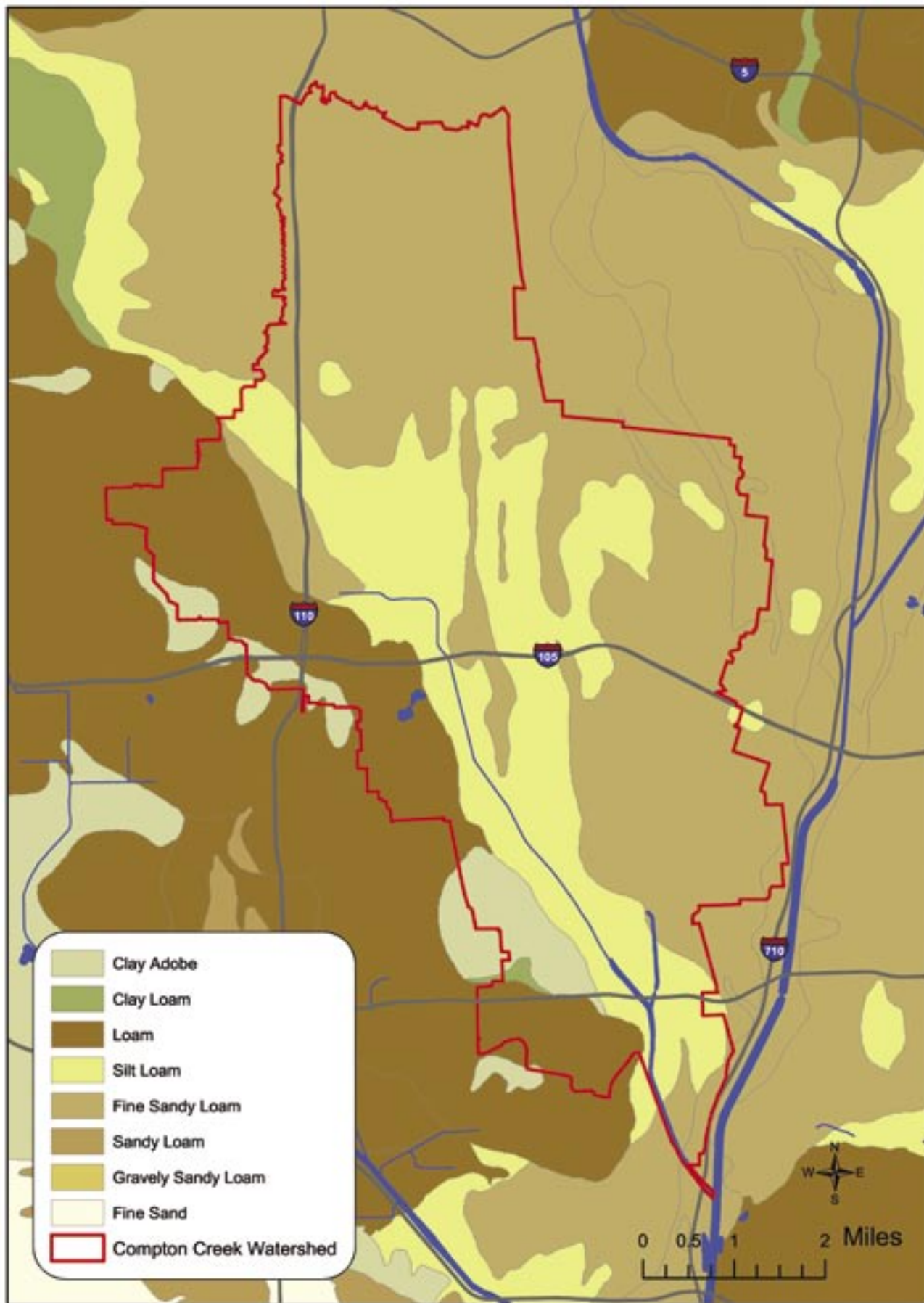
### ▣ Regional and Local Geology

Several million years ago, the Los Angeles Basin was deep under water, as much as 5,000 feet under the Pacific Ocean. As surrounding mountain ranges shifted

in a clockwise spiral, the underlying crust stretched and cracked and released molten rock from below. The crust thinned and collapsed, forming an immense geologic “bowl.” Sand, silt and clay from the sea and ancient rivers poured into the bowl. Since the Miocene Epoch (beginning 20 million years ago), the Los Angeles Basin has collected more than 20,000 feet of sediments. As sediments continued to pile on, pressure changed this enormous thickness of sediments into rock. This thickness of rock is composed of alternating layers of sandstone and shale, because of constantly changing geologic conditions during deposition.

### ▣ Soils

In the Compton Creek Watershed, Hanford Fine Sandy Loam makes up almost half of the area. (Table 2-3) These are well-drained soils that formed in moderately coarse textured alluvium, dominantly from granite. Hanford soils are on stream bottoms, floodplains, and alluvial fans. Fine Sandy Loam is dark brown, moist, weak with a fine granular structure. It is slightly hard, very friable, non-sticky, and non-plastic. Chino Silt Loam comprises about 30% of the area. Silt Loam is indicative of the location of the historic creek bed. Ramona Loam, which is a coarse sandy loam, makes up another 15% of the area (Figure 2-5).



**Figure 2-5 Regional Soils**

Source Data: County of Los Angeles Department of Public Works

**Table 2-3 Soil Types in Compton Creek Watershed**

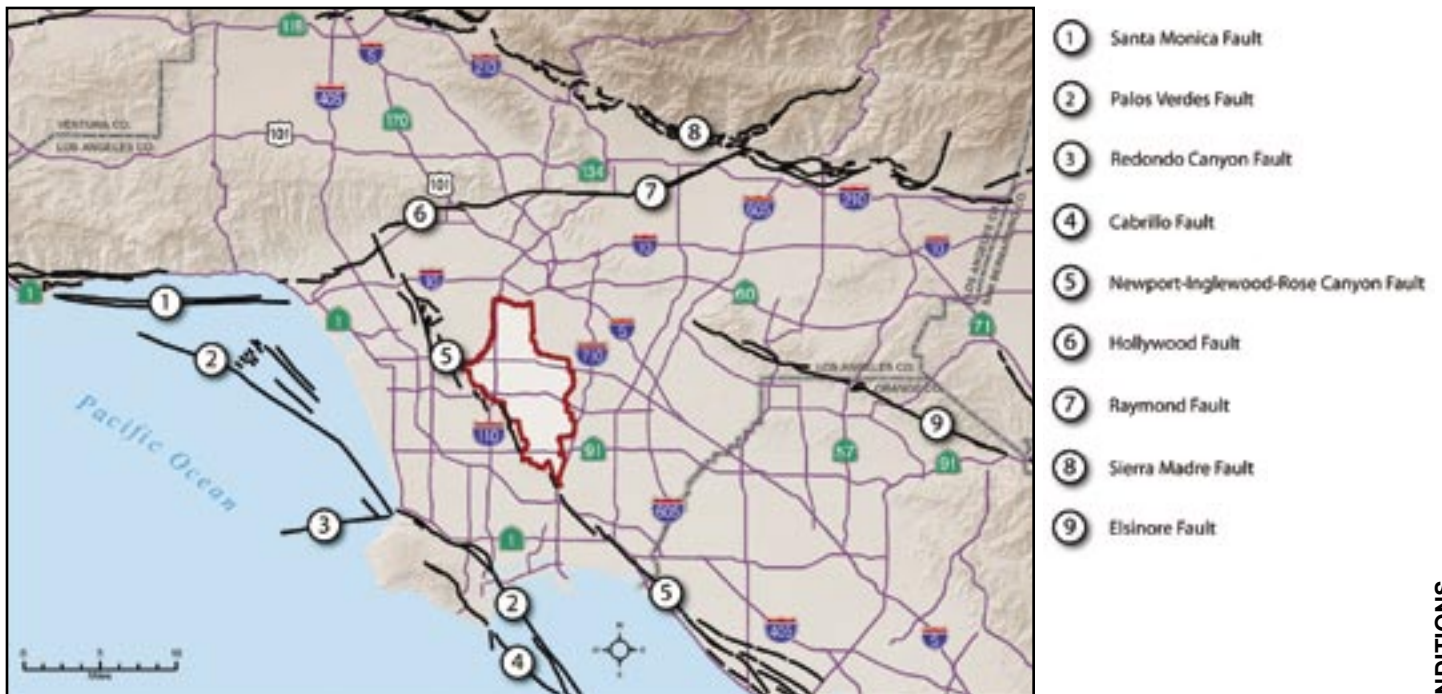
Soil Type Name	Area by Type (ac)	% of Total Area
Chino Silt Loam	7,914.11	29.39
Hanford Fine Sandy Loam	13,197.02	49.02
Montezuma Clay Adobe	1,039.66	3.86
Ramona Clay Loam	50.00	0.19
Ramona Loam	4,054.44	15.06
Tujunga Fine Sandy Loam	668.54	2.48
Total	26,923.77	100.00

Source: County of Los Angeles Department of Public Works

**4. Seismology**

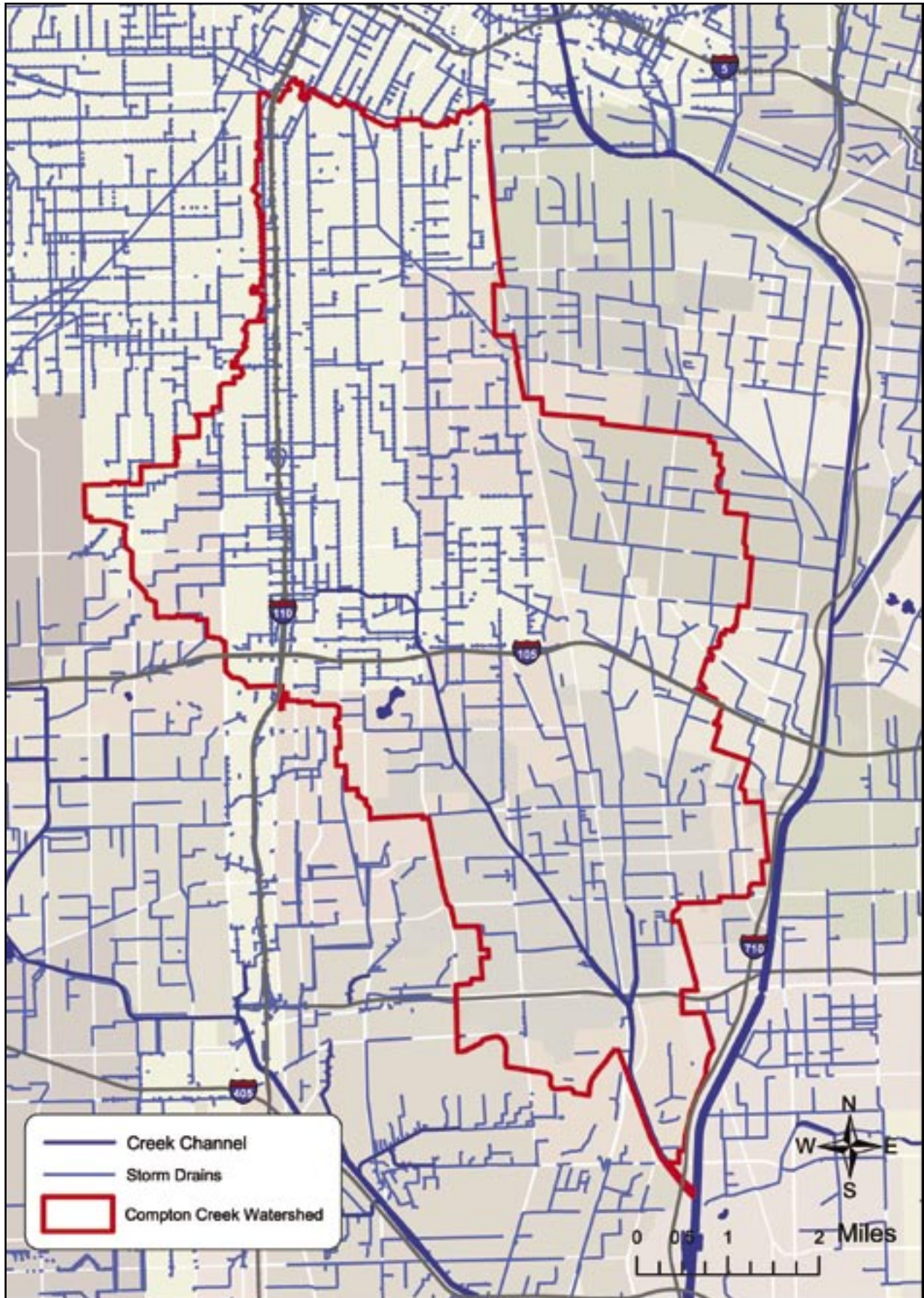
Each year, California generally gets two or three earthquakes large enough to cause moderate damage to structures (magnitude 5.5 and higher). There are hundreds of identified faults in California; about 200 are considered potentially hazardous based on their slip rates in recent geological time (the last 10,000 years). The map below shows the major fault lines in the Los Angeles region. The fault shown along the southwest border of the Watershed is the Newport-Inglewood Fault, the only known major fault in the Watershed (Figure 2-6).

The Newport-Inglewood Fault extends from Beverly Hills to Newport Beach in southern Orange County. The last major earthquake (magnitude 6.3) occurred in 1933 along the stretch between Newport Beach and Compton, centered near Long Beach. Damage attributed to liquefaction was noted in the vicinity of Compton following the 1933 Long Beach earthquake. The considerable damage in Willowbrook, Lynwood, South Gate, and Huntington Park was probably due to the location of these communities on formerly marshy ground, particularly in areas along Compton Creek and the former courses of the Los Angeles River.



**Figure 2-6 Earthquake Faults in the Los Angeles Basin**

Source Data: USGS, street data from GDT © 2003



**Figure 2-7 Hydrology of Compton Creek Watershed**

Source data: GDT © 2003, City of Los Angeles, County of Los Angeles Department of Public Works

## C. HYDROLOGIC CONDITIONS

### 1. Surface Water Hydrology

#### ▣ Historic Drainage

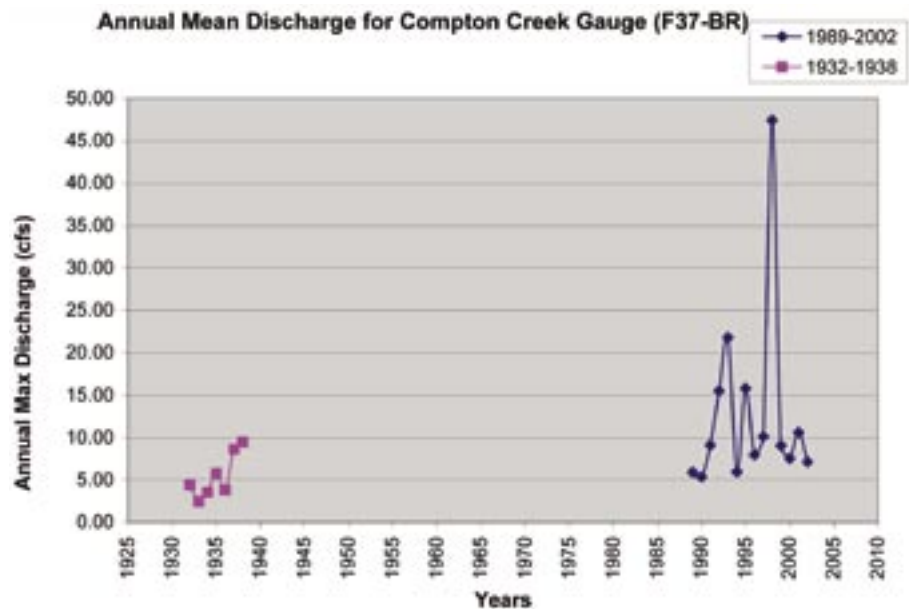
The lower Los Angeles River once flowed over one of the largest floodplains in the United States. In the Compton region, old maps show marshes near Lynwood and west of Compton, with pockets of shallow water and a dense growth of willows and cottonwoods. Drainage of the wetlands and channelization of the river and its tributaries began with farming and cattle ranching in the 1780s. By 1954 the entire length of the Los Angeles River and portions of Compton Creek were channelized.

#### ▣ Current Conditions

A network of approximately 250 miles of storm drains and channels drain the Watershed, as shown on Figure 2-7. Compton Creek is approximately 8.5 miles long, with an average gradient of only 0.22%. The upper two-thirds of the Creek is a concrete channel for 5.8 miles and the downstream section is a 2.7-mile earthen-bottom channel. Water flows underground inside storm drains until it surfaces in the Watts district in southern Los Angeles as Compton Creek. Once it surfaces, Compton Creek is a rectangular concrete box channel, ranging from 40 to 60 feet wide, with 11- to 13-foot-high sidewalls. Downstream, the Creek changes to a trapezoidal channel just north of the 91 Freeway. This section has rock-lined banks and an earthen bed, mostly comprised of sand and gravel. This natural bottom portion of the Creek is 180 feet wide with 12 foot high sidewalls. Just 200 feet above the confluence of Compton Creek and the Los Angeles River the Creek once again becomes

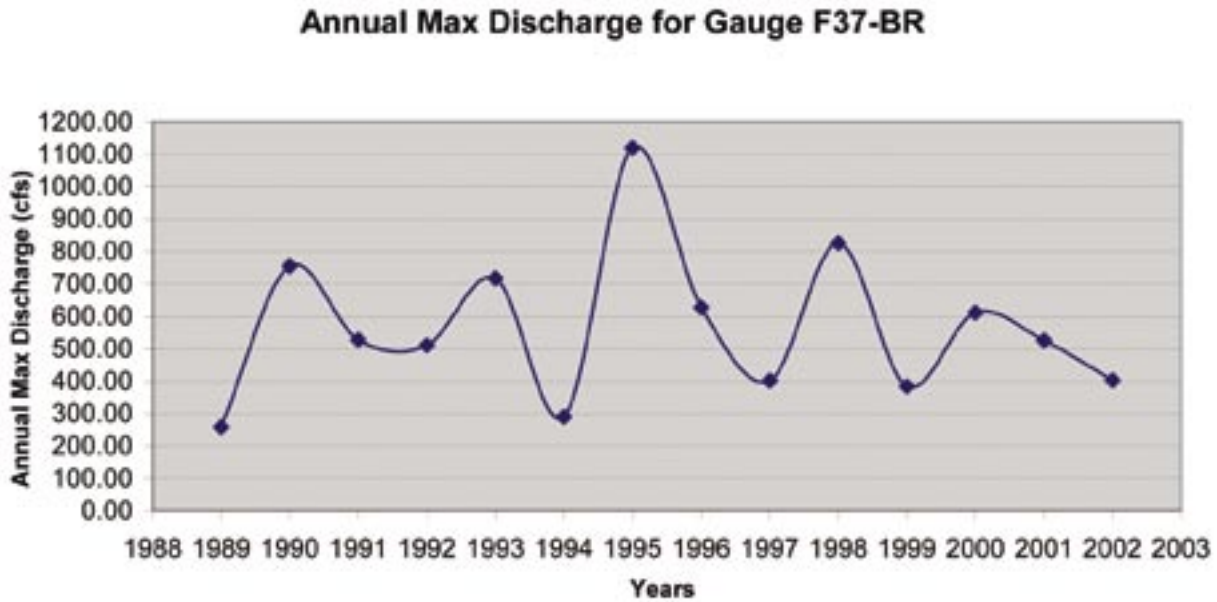
concrete. The capacity of the channel at its origin is 3,900 cubic feet per second, and the maximum capacity of the channel in the earthen-bottom section, just south of the 91 freeway, is 21,700 cubic feet per second.

Figure 2-8 and Figure 2-9 show data available from a stream gauge maintained by the LACDPW. This stream gauge is located at Greenleaf Avenue, just above the start of the earthen-bottom channel section. The stream gauge was active from 1932–1938. It was replaced in water year 1989 (a water year runs from October 1–September 30). These data are not complete. However, the graph in Figure 2-8 suggests how much runoff volume has increased from the 1930s to the present. Much of the open land in the Watershed has been developed in the last 70 years, and it is likely that this increase in runoff is a result of the large increase of impervious cover. While parks and vacant land may be capable of absorbing up to 90% of the rain that falls on them, commercial properties may only absorb 10% or less, with at least 90% impermeable surface. Based on 2000 land use data from SCAG, the Watershed averages about 65% imperviousness overall.



**Figure 2-8 Annual Mean Discharge, 1932–2002**

Source: County of Los Angeles Department of Public Works



**Figure 2-9 Annual Maximum Discharge, 1989–2002**

Source: County of Los Angeles Department of Public Works

## 2. Groundwater Hydrology

The Coastal Plain of Los Angeles is underlain by five different groundwater basins, including the Central, Hollywood, La Habra, Santa Monica, and West Coast Basins. Of these, the Central and West Coast Basins are the two largest, encompassing a total area of 420 square miles. The Central Basin has the most storage capacity of the basins in the Coastal Plain. The Central Basin underlies the Compton Creek Watershed. The Newport-Inglewood Fault creates a partial barrier between the Central and West Coast basins and affects the interflow between them.

About three-quarters of the Watershed is underlain by shallow underground aquifers that are confined by a clay cap, which protects the deeper groundwater formations (e.g., the Central Basin) from contamination associated with historic land use activities. In the northern part of the Watershed, clay cap layers are generally absent, creating an opportunity for any surface contamination to infiltrate into the deeper aquifer layers.

## D. SURFACE WATER QUALITY

### 1. Regulatory Setting

#### ▣ Federal Regulations

The Federal Water Pollution Control Act, commonly referred to as the Clean Water Act, regulates discharge of pollutants into surface waters, rivers, lakes, estuaries, coastal waters, and wetlands of the United States. It gives the US Environmental Protection Agency (EPA) authority to implement pollution control programs, set wastewater standards for industry, and determines water quality standards for contaminants in surface waters.

Section 303(d) of the Clean Water Act calls for the listing of waters that are impaired—those waters that fail to meet water quality standards that have set for them. The Clean Water Act requires that priority rankings be established for waters and that Total Maximum Daily Loads (TMDL) be developed for these waters. TMDLs specify the maximum amount of a pollutant that a water body can receive without exceeding applicable water quality standards. The TMDL is then allocated among both point and nonpoint pollutant sources, and a reduction target established for each source.

Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System (NPDES), which prohibits discharge of pollutants into waters of the United States from any point source unless an NPDES permit is obtained first. Section 402(p) of the Clean Water Act mandates regulation of municipal, industrial, and construction discharges under the NPDES program. In California, these permits are issued through the State Water Resources Control Board and the nine Regional Water Quality Control Boards.

**▣ State Regulations**

Under the Porter Cologne Water Quality Control Act of 1969, responsibility for protecting water quality in Los Angeles County rests with the State Water Resources Control Board (State Board) and the Los Angeles Regional Water Quality Control Board (LARWQCB). The State Board sets statewide policies and develops regulations for the implementation of water quality control programs mandated by state and federal statutes and regulations. The LARWQCB develops and implements the Los Angeles Basin Plan, called the “Water Quality Control Plan, Los Angeles Region.” The Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan “designates beneficial uses; sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses; and describes implementation programs to protect all waters in the region.”

**▣ Designated Beneficial Uses**

Beneficial uses are a key element of water quality protection. Based on designated beneficial uses, appropriate water quality objectives can be established and programs that maintain or enhance water quality can be implemented to ensure the protection of beneficial uses. Seven beneficial uses have been designated for Compton Creek (Table 2-4). The designation “Municipal and Domestic Supply” is defined as “uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.” Compton Creek has received this designation because of State Board Resolutions, Nos. 88-63 and 89-03, which mandates that “all surface and ground waters of the State are considered to be suitable or potentially suitable for municipal or domestic water supply and should be so designated by the Regional Boards.”

**▣ Identified Impairments**

Compton Creek is listed as impaired due to a variety of point and nonpoint sources, with 303(d) listings for pH, copper, lead, and coliform in the water column. Impairments may result from excess levels in the water column, sediments, or in the tissue of aquatic life. The water quality objectives for each constituent on the 303(d) list for Compton Creek are shown in Table 2-5, as well as observed data ranges in the Creek.

**Table 2-4 Beneficial Uses of Compton Creek**

<i>Code</i>	<i>Beneficial Use</i>	<i>Status of Use</i>
MUN	Municipal and Domestic Supply	Potential <sup>1</sup>
GWR	Ground Water Recharge	Existing
REC1	Water Contact Recreation	Existing, Access Prohibited
REC2	Non-Contact Recreation	Existing
WARM	Warm Freshwater Habitat	Existing
WILD	Wildlife Habitat	Existing
WET <sup>2</sup>	Wetland Habitat	Existing

<sup>1</sup> Designated under SB 88-63 and RB 89-03, may be considered for exemption at a later date  
<sup>2</sup> Water bodies designated as WET may have wetlands habitat associated with only a portion of the water body.

Source: LARWQCB, Los Angeles Basin Plan 1994

**Table 2-5 Water Quality Objectives and Observed Values in Compton Creek**

<i>Impairment</i>	<i>Applicable Objective/Criteria</i>	<i>Data Ranges Observed in Compton Creek</i>
pH	<u>Basin Plan Numeric Objective:</u> 6.5–8.5 pH units	6.8–8.3 pH units
Copper	<u>USEPA Water Quality Criteria:</u> Proposed dry weather target 19 ug/l	0–16.1 ug/l; 31 mg/kg in one LARWQCB sediment sample
Lead	<u>USEPA Water Quality Criteria:</u> varies based on hardness, typically 3.2–25 ug/l; 128 mg/kg for sediments Proposed dry weather target 8.9 ug/l	0–11 ug/l; 80 mg/kg in one LARWQCB sediment sample
Coliform	<u>Basin Plan Numeric Objective:</u> (Inland) fecal coliform not to exceed log mean of 200 mpn/100ml in 30-day period and not more than 10% of samples to exceed 400 mpn/100ml	1,300–240,000 mpn/100ml (fecal 300–7,000 mpn/100ml) e. coli 100–61,000 mpn/100ml

Source: LARWQCB, Watershed Management Plan

Major surface water quality issues to be addressed in the Watershed include management of stormwater quality, enhancement of wildlife habitat and recreational areas, assessment of nonpoint sources, including horse stables and septic systems, accumulation of trash and litter, and potential pollution of surface water from contaminated ground water. Surface and groundwater may also be impacted by leaking underground storage tanks that may have introduced petroleum hydrocarbons and other organic compounds into the soil.

The trash TMDL for the Los Angeles River was adopted by the state and approved by the EPA in August of 2002. Compton Creek is indirectly included as a tributary. This TMDL calls for a 10% reduction per year of trash discharge, with a zero discharge limit by the year 2015. The first compliance milestone is a 20% reduction in trash by September of 2006. The metals TMDL for the Los Angeles River and tributaries was drafted by EPA and adopted by the Regional Board in June 2005. The bacteria TMDL is due to be completed by 2008.

**2. Existing Data and Monitoring**

Most of the water quality data that exist for Compton Creek were collected by the LARWQCB between 1974 and 1997. LACDPW conducted a one-time sampling event in October 2003 at eight locations along Compton Creek, mostly storm drain outlets, and tested for a range

of constituents. Since 2002, the City of Los Angeles Watershed Protection Division has collected bacteria samples monthly near the mouth of Compton Creek as part of their efforts to monitor inputs to the Los Angeles River. In January 2005 they began sampling metals as well. Friends of the Los Angeles River (FoLAR) has also sampled one location in the Creek for a variety of constituents since 2003. Results of this sampling indicate that in general, dry weather bacteria levels for total coliform vary but tend to be high, pH is within acceptable limits listed in the Basin Plan, and metals are also somewhat variable but not extremely high. Organics, which were sampled less frequently, were mostly not detected. Concentrations for copper and bacteria were higher in some of LACDPW’s storm drain samples than in the in-stream samples collected both during that event and by other sampling programs.

Table 2-6 shows the range of constituents monitored by various entities on Compton Creek. These sampling events span 30 years, although not for all locations or constituents, and collectively cover a wide range of constituents. Despite these sampling efforts, the data are not considered sufficient to permit an extensive analysis of existing surface water quality, or to characterize the source or geographic variability of the sources of contaminants. The sampling locations and constituents tested by these different organizations vary over time, and the frequency and seasonality of sampling is inconsistent. Bacteria

sampling has occurred monthly for the past three years, but until this year metals had only been sampled three times, between 1991 and 1993. Organics have not been sampled since early 1993. For a more detailed discussion of water quality, and existing and proposed monitoring efforts, please refer to Chapter 6 (Monitoring Program).

**Table 2-6 Constituents Monitored in Compton Creek**

Category	Constituent	RWQCB 1974–75 and 1987–97	City of LA since 2002**	FoLAR since 2003	LACDPW 2003–1 event
Conventional Chemistry & Physical Properties	Ammonia-N	●			●
	Calcium	●			
	Chloride	●			●
	COD				●
	Conductivity	●			●
	Dissolved Oxygen	●		●	●
	Hardness	●			●
	Magnesium	●			
	Nitrate-N	●		●	●
	Oil & Grease	●			
	Ortho-Phosphate				●
	pH	●		●	●
	Potassium	●			
	Sulfate	●			
	TDS	●		●	●
	Temperature			●	
	Trash			●	
	TSS				●
Turbidity	●		●	●	
Bacteria	Bacteria, E. coli		●	●	●
	Bacteria, Enterococcus		●	●	●
	Bacteria, Fecal Coliform	1994–97			●
	Bacteria, Streptococcus				●
	Bacteria, Total Coliform	1994–97	●	●	●
Metals	Aluminum, diss/tot				●
	Arsenic	●	●		
	Barium	●	●		
	Cadmium	●	●		●
	Chromium VI / tot	●	●		
	Copper	●*	●		●
	Iron	●			
	Lead	●*	●		●
	Manganese	●			
	Mercury	●	●		
	Selenium	●	●		
	Silver	●	●		
Zinc	●	●		●	
Organics	Various	1987–93			

\* One sediment sample collected in 1991; \*\*Bacteria since 2002, metals since January 2005

Source: Compiled by Los Angeles & San Gabriel Rivers Watershed Council

### 3. Sources of Pollution

As indicated in the LARWQCB's 1994 Basin Plan, pollutants degrading the beneficial uses can be categorized into point source pollutants and nonpoint source pollutants. Pollutants from point sources are transported to water bodies in controlled flows at well-defined locations, such as discharges from wastewater treatment facilities or industrial sites. Pollutants from nonpoint sources are diffuse, both in terms of their origin and mode of transport to surface and ground waters. These pollutants are transported to waters by runoff from precipitation, irrigation, and atmospheric deposition.

There are six regulated point source dischargers in the Compton Creek watershed (Table 2-7). Of the six, Pacific Terminals' Dominguez Hills Tank Farm is the only major NPDES discharge. Major discharges are treatment plants with a yearly average flow of over 0.5 MGD, or an industrial source with a yearly average flow of over 0.1 MGD, or those with lesser flows but with acute or potential adverse environmental impacts. The other point source dischargers are considered minor NPDES permits, which may include miscellaneous wastes such as pumping out high ground water that may be a nuisance, swimming pool wastes, and ground water seepage.

Other facilities in the Watershed are covered under the general industrial stormwater permit for the Los Angeles River Watershed. Of the 1,336 dischargers enrolled under the general industrial stormwater permit, less than 300 permits are located in zip codes and cities that lie within the Watershed. Over half of these permits are for businesses engaged in wholesale trade — durable goods, fabricated metal products, primary metal industries, trucking & warehousing, and chemicals & allied products. The remaining permittees are mostly various manufacturing facilities. Although bi-annual compliance monitoring is required of these sites, specific data have not been reviewed. Because sampling practices and analytical laboratories vary considerably, the reliability and consistency of these data for purposes of comparative source assessment are limited (LARWQCB 2004a). Also, the locations of

industrial facilities are widespread; mostly concentrated along the Alameda Corridor and in the southern end of the Watershed. Concentrations of bacteria, copper and lead sampled from storm drains during LACDPW's 2003 grab sampling are not significantly different from contributing areas that are primarily industrial than from those that are primarily residential. Contributions from any specific industrial site may be diluted by the time the discharge reaches the Creek. Further monitoring by subwatershed could better isolate areas of concern, which could then lead to more specific source assessments.

Construction sites of one acre or larger are covered by a general construction stormwater permit, which regulates the discharge of stormwater runoff during the construction phase. There are 35 locations listed under the construction permit in zip codes and cities associated with the watershed, though all of the sites may not be within the Watershed. The small number of construction sites under the general construction permit indicate that sediments and other constituents associated with construction site stormwater runoff may not be a major problem. Illicit sewer connections to the storm drain system may also contribute to the presence of contaminants in both stormwater and dry season flows.

**Table 2-7 NPDES Point Source Permits in the Compton Creek Watershed**

<i>NPDES No.</i>	<i>Discharger (Facility)</i>	<i>Location</i>	<i>Address</i>	<i>Waste Type</i>
CA0052949	Pacific Terminals LLC (Dominguez Hills Tank Farm)	Compton	2500 E. Victoria St	DMISCEL
CA0064025	Sta-Lube/CRC Industries Inc.	Rancho Dominguez	3039 Ana St	DPROCES
CAG994001	California Water Service Co.(Well 27201 & 29001)	Long Beach	Santa Fe Ave & Victoria St	NMISCEL
CAG994002	Compton Municipal Water Dept. (Municipal Water Supply Wells)	Compton	480 W. Compton Blvd	DMISCEL
CAG994002	County of Los Angeles DPW (Laurel Park Road Pumping Plant)	Rancho Dominguez	Alameda & Santa Fe	NCNWTRS
CAG994002	United Stormwater, Inc. (Storm Drain Cleaning I)	Los Angeles	105 Freeway @ 110 Freeway	DMISCEL
DMISCEL: Nonhazardous (designated) wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage DPROCES: Nonhazardous (designated) process waste (produced as part of industrial/manufacturing process) NMISCEL: Nonhazardous wastes from dewatering, rec. lake overflow, swimming pool wastes, water ride wastewater, or groundwater seepage NCNWTRS Nonhazardous contaminated groundwater				

Source: US EPA, LARWQCB

Typical pollutants from nonpoint sources in stormwater and urban runoff include urban debris and trash, suspended solids, bacteria, viruses, heavy metals, pesticides, petroleum hydrocarbons, and other organic compounds. In addition to the permitted dischargers described previously, nonpoint sources include several nurseries that operate within the Watershed, and a high number of horse owners who live in the neighborhood of Richland Farms in the southern part of the Watershed. The total number of horse owners or stables in the Watershed has not been determined. Other non-point sources of contaminants in stormwater and dry weather runoff vary widely: metals and solvents from industrial yards such as automobile dismantlers, organic compounds from fueling and maintenance facilities, metals and hydrocarbons from highways, streets and parking lots, trash and sewage from homeless encampments along the Creek, and pesticides from parks and residential areas. In addition, sediment from exposed land surfaces such as vacant land and construction sites, and atmospheric deposition of pollutants from vehicles and aircraft, construction activities, and industrial sources represent additional sources of contaminants.

With respect to metals, the LARWQCB has noted there are significant differences in the sources of metals during dry weather and wet weather in the Los Angeles River. During dry weather, concentrations of dissolved metals are higher, which may be a result of treatment plant discharges which constitute the majority of the flow. During wet weather, most of the metals are in particulate form and are associated with wet-weather stormwater flow (LARWQCB 2005). Because Compton Creek receives no discharges from treatment plants, this difference may or may not hold true. The available Compton Creek metals data reviewed for this Plan were only for dry weather.

Coliforms serve as indicator organisms for water quality sampling. Indicator organisms are non-harmful organisms that are associated with disease-producing or pathogenic organisms. High coliform counts can indicate the presence of high concentrations of pathogenic bacteria, viruses, and protozoans. As water from Compton Creek discharges into the Los Angeles River just a few miles from the ocean, it could contribute to beach closures that occur when bacterial indicator levels at the beaches are high enough to present serious health risks to swimmers.

Urban debris, or trash, is present in both stormwater and urban runoff and includes material suspended in the water column and floating material. Floating trash can inhibit the growth of aquatic vegetation, decrease habitats

for fish and other living organisms, and cause harm to wildlife through ingestion of, or entanglement with, these materials. Per California Code Section 68055.1(g), trash refers to man-made litter including the following:

...all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state [...].

However, this definition excludes sediments, and it also excludes oil and grease, exotic species (such as *Arundo donax*), and naturally occurring vegetative material.

Elevated pH suggests that the water in Compton Creek is alkaline (as opposed to acidic). Base (or alkaline) sources include common household products (e.g., baking soda, antacids, ammonia, or some drain cleaners), and lime, which is a component of cement and is sometimes used as a soil amendment). It should be noted, however, that recent monitoring data is not consistent with the listing for elevated pH, and this issue may warrant reconsideration.

Other water quality contaminants may also be present in Compton Creek. Pesticides and insecticides that may find their way into the Creek often stem from their use in lawns and gardens throughout the cities in the Watershed. Similar to metals, the introduction of pesticides and insecticides into the waters of the Watershed via urban runoff can result in sediment and water toxicity. Pesticides that mix or dissolve in the water often remain toxic and can adversely affect the health of organisms living in the water.

Organic compounds that could be present in the waters of the Watershed include polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), and dichloro-diphenyl-trichloroethane (DDT). PCBs were used in transformer oils as a heat-exchange medium in the past and have since been banned from use due to their toxic, bioaccumulative, and extremely stable properties in the environment. Although there are still many transformers currently in use that contain PCBs, over time these transformers will be replaced in response

to regulatory mandates and/or routine replacement activities. PAHs are the byproducts of the combustion of refined petroleum products or the burning of biomass fuels (e.g., wood fires), or leach from refined petroleum products (e.g., asphalt, creosote, or spilled motor oils). The primary sources of PAHs are vehicles, aircraft, and other engines fueled with gasoline or diesel fuel, which results in aerial emissions. DDT, a widely used and long-lasting pesticide that was banned in 1972, still remains present in some local waters. It is not known whether it is present in Compton Creek sediments.

As part of a prior NPDES permit requirement, LACDPW conducted stormwater monitoring for specific land uses between 1994 and 2000 (LACDPW 2000). Land use types included high-density single-family residential, multi-family and mixed residential, vacant, educational, commercial, light industrial, and transportation. Their results indicate that light industrial land uses contribute the highest concentrations of suspended solids and lead, and the second highest concentrations of copper (after transportation). Coliform levels were highest from high-density residential and commercial land uses. Detections of PAHs and pesticides were statistically insignificant for all land use types. The LACDPW also specifically identified metal fabrication businesses as producing the highest median concentrations for zinc, copper, and suspended solids (LACDPW 2000). Metal fabrication, auto dismantlers, metal scrap yards, and related industries represent nearly half of the industrial permittees in the Watershed, thus could be significant contributors of copper and other metals to the Creek.

Because much of the monitoring to date has been limited in a spatial or temporal sense, conclusions regarding the presence of or sources of specific contaminants are rather general. Identification of more specific sources could be accomplished through additional fieldwork at site-specific monitoring points, as discussed in Chapter 6.

## E. GROUNDWATER QUALITY

### 1. Monitoring

Groundwater wells in the West and Central groundwater basins are maintained by the Water Replenishment District (WRD). Monitoring wells are used to test water quality and groundwater levels, but are not used for drinking water supply. Production wells are used as municipal water supply and are deep wells, generally 500 feet or more, to avoid any potential contamination in the shallow groundwater zones. In all, there are 189 wells in the Watershed: 20 monitoring wells, 126 production wells, and 43 unclassified (inactive) wells.

Monitoring in the Central Basin that underlies the Watershed has shown that the quality of most water in the Central Basin is suitable for public supply. Total dissolved solids (TDS) concentrations are low throughout most of the aquifers, often less than 500 mg/L. High TDS levels begin to interfere with the use of water between 500 and 1,000 mg/L. At 1,000 mg/L, water is considered brackish and unusable. Chloride concentrations are also low throughout most of the freshwater aquifers, commonly less than 50 mg/L. In some portions of the basin, manganese and iron concentrations exceed the drinking water limit. Blending such groundwater with lower concentration sources may make these supplies usable for domestic purposes.

In addition to relatively high levels of dissolved solids (common throughout most of Southern California), other contaminants from urban land uses may be present in groundwater. In urbanized areas, these may include volatile organic compounds, hexavalent chromium (or Chromium 6) from industrial activities, and nitrates from the use of fertilizers and septic tanks. These constituents are present in very low levels in Central Basin groundwater. In the early 1990s, the State of California mandated upgrades to underground gasoline storage systems to prevent leakage of gasoline and migration to groundwater. In 1996, the discovery of a gasoline additive, Methyl Tertiary Butyl Ether (MTBE) in groundwater extracted from wells in the City of Santa Monica indicated that such systems may not always be effective. As of 2002, all wells in Central Basin service area had been tested at

least twice and MTBE was not detected. The rocket fuel component perchlorate has been detected at low levels in two wells.

### 2. Basin Management

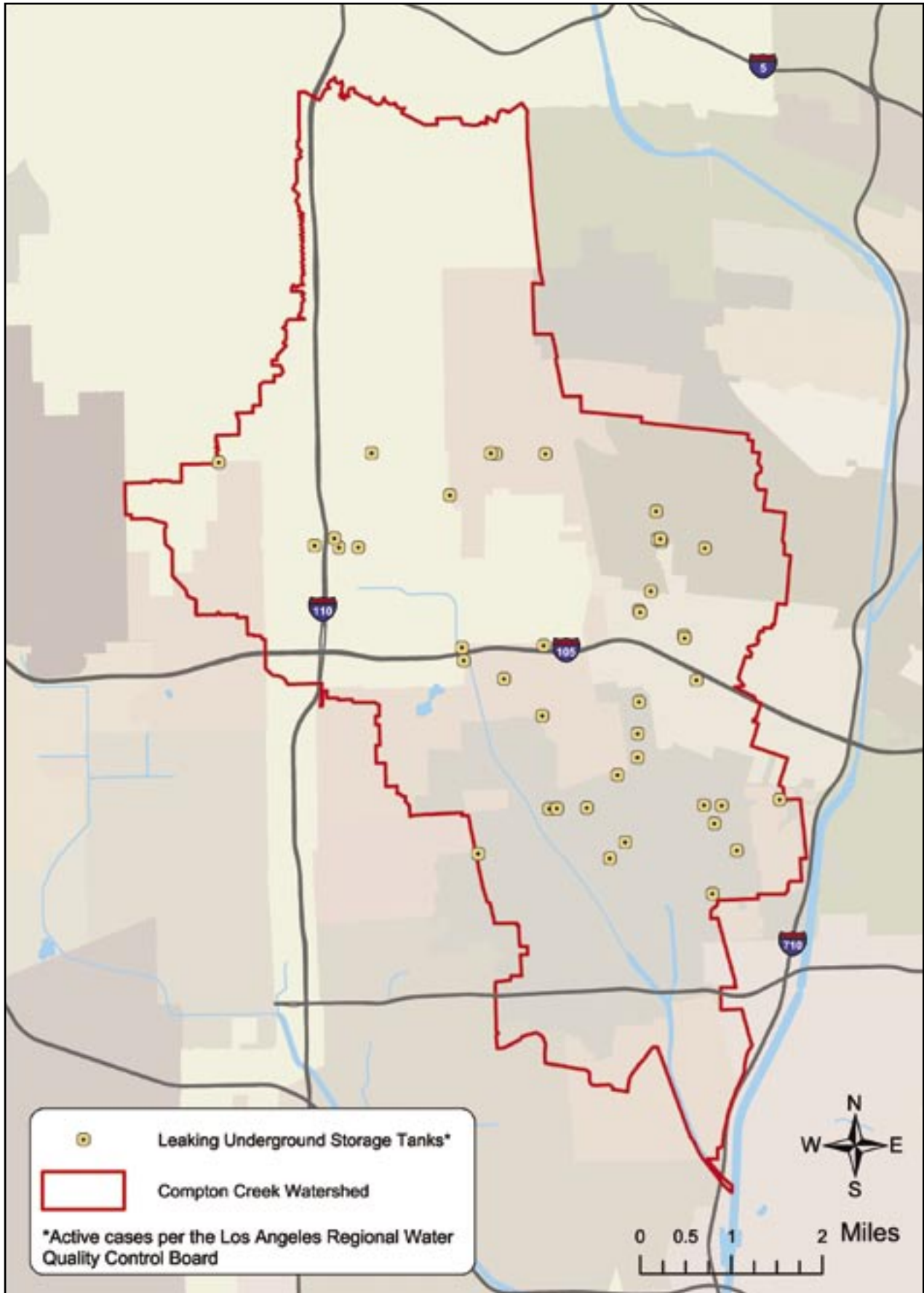
During the first half of the 20th century, the combination of unregulated groundwater pumping and reduced natural recharge as urbanization increased led to a decline in groundwater levels, which caused many water wells to go dry and allowed sea water intrusion to contaminate groundwater along the coast. In 1959, the Water Replenishment District of Southern California was established to maintain groundwater levels by recharging the aquifers with imported and other water to make up for the overdraft. Management of groundwater involves controlling both the quantity and quality of sub-surface water residing within a groundwater basin.

The WRD manages an area of 420 square miles that provides groundwater for 3.5 million residents in 43 cities of southern Los Angeles County. The Central Basin is now artificially replenished by surface spreading and subsurface injection of replacement water. These replenishment operations are a joint effort of WRD and the LACDPW and occur east of the Watershed near the Whittier Narrows. Three sources are utilized for replenishment at the spreading grounds: (1) Metropolitan Water District of Southern California which imports water from northern California and the Colorado River; (2) Sanitation Districts of Los Angeles County, which provide tertiary-treated reclaimed wastewater, and (3) stormwater runoff. Infiltration of stormwater in portions of the Watershed and underground flow from adjacent groundwater basins supplements artificial replenishment.

The LARWQCB operates regulatory programs to address specific sub-surface water quality issues such as leaking underground storage tanks and toxic spills.

#### ▣ Underground Storage Tanks Program

Any issues arising within the Watershed related to underground storage tanks are addressed by the Los Angeles River Watershed Unit of the LARWQCB's Leaking Underground Storage Tank (UST) Program.



**Figure 2-10 Leaking Underground Storage Tank Locations**

Source Data: Los Angeles Regional Water Quality Control Board, Basemap data from GDT © 2003

The major source of contamination from underground storage is leaking fuel tanks. Other constituents of concern may exist in specific areas, but most frequently, the leaks involve gasoline containing methyl tertiary butyl ether (MTBE) from underground tanks at service stations. The map in Figure 2-10 shows the location of active cases of leaking underground storage tank cleanup projects in the Compton Creek Watershed. These typically affect shallow groundwater, not the deeper production aquifers.

### ▣ Spills, Leaks, Investigation & Cleanup Program

The LARWQCB's Spills, Leaks, Investigation & Cleanup (SLIC) Program deals with site investigation and corrective action for sites not overseen by the Underground Tank Program and the Well Investigation Program. This program covers all types of pollutants (such as solvents, petroleum fuels, and heavy metals) and all environments, including surface water, groundwater, and the vadose zone, the area between the surface and groundwater. Upon confirming that an unauthorized discharge is polluting or threatens to pollute regional water bodies, the LARWQCB oversees site investigation and corrective action. Statutory authority for the program is derived from the California Water Code (Division 7, Section 13304).

## F. FLOOD PROTECTION

### 1. Jurisdictions

The open channel of Compton Creek is maintained by the US Army Corps of Engineers (USACE) and the County of Los Angeles Flood Control District. The Creek is under USACE's jurisdiction roughly within the boundaries of the City of Compton, and under County jurisdiction in other areas. The Watershed is drained by an extensive network of storm drains, which are maintained by LACDPW and the cities in the Watershed. Most storm drains are located beneath streets or along other transportation corridors.

### 2. Infrastructure

Throughout the last century, urban development exacerbated the frequency of flooding along most of the Los Angeles River and tributaries such as Compton Creek. When first constructed, flood control projects were designed to accommodate a 100-year flood (which theoretically occurs one in a 100-year period, although the actual frequency may vary). Since that time, continued development has increased the extent of impervious surfaces and increased the volume of stormwater, which could increase the flood risks. In 1998, the Federal Emergency Management Agency imposed mandatory flood insurance upon portions of the Los Angeles River Watershed, including portions of the Compton Creek Watershed.

In response, the USACE and the LACDPW developed the Los Angeles County Drainage Area (LACDA) project to accommodate the estimated stormwater discharge from a 133-year storm event. This increase in flood protection was achieved by raising some of the levees, adding parapet walls atop portions of the levees along the lower portions of Los Angeles River and Compton Creek, and improvements to bridges in this area. As a result of the LACDA project, many property owners with federally-backed mortgage loans who live within the floodplain are no longer required to purchase flood insurance.

Although the LACDA project did improve flood protection from potential failure of the levees on the Los Angeles River and the lower portion of Compton Creek, it did not address local storm drain infrastructure. In 1997, LACDPW proposed to conduct studies for 29 regional drains as part of a Regional Relief Program in the County of Los Angeles. A feasibility study is being proposed for the Hooper and Glen Avenue drainage systems (two of the major drains in the Watershed) as part of this program. The feasibility study may consider improvements to these drains and/or identify cost effective watershed management approaches that could improve the effectiveness of the existing drainage systems.

To maintain the discharge capacity of Compton Creek, periodically the USACE grades and LACDPW compacts the earthen-bottom portion of the Creek. This reduces flood risk by allowing water to move downstream more quickly.

**3. A 500-Year Storm Event**

As noted above, individual storm events can be identified based on the theoretical return frequency, as determined by the volume and intensity of rainfall. On November 12, 2003, a low-pressure storm system stalled over the Watershed for several hours, generating over five inches of rainfall and over one foot of hail in some locations. Rainfall intensities exceeding 500-year event levels caused significant localized flooding that damaged over 250 structures and resulted in the reported abandonment of over 100 vehicles along flooded streets and intersections. Road and flood maintenance crews responded to calls in the East Rancho Dominguez, Florence-Firestone, Walnut Park, and Willowbrook neighborhoods of Los Angeles County and the cities of Compton, Los Angeles, and Lynwood. The County and the cities of Compton and Los Angeles declared local emergencies.

LACDPW concluded that its flood control facilities generally performed as designed but the storm temporarily overwhelmed local storm drains. The intensity of the runoff exceeded the design capacity of the systems. Local drainage systems are typically designed to prevent flooding from a storm with a return frequency of 25 years. Similarly, the USACE concluded that the Compton Creek Channel functioned adequately, but the limitation of the local storm drain network may have limited the volume of stormwater that was discharged to the channel during the event.

**G. CHANNEL AND STORM DRAIN MAINTENANCE**

Many aspects of channel maintenance are directly or indirectly related to flood control, such as routine cleaning of catch basins and clearing of storm drains, the removal of trash and debris from open channels, and the grading of the earthen-bottom channel. The maintenance and repair of fencing, removal of graffiti, and drain stenciling are also maintenance issues. As previously mentioned,

USACE and LACDPW are responsible for maintenance of the Compton Creek channel, and of their respective storm drains. Cities within the watershed are responsible for maintaining their own storm drains, and some also have programs to address a range of other maintenance issues. Regional non-profits, such as Heal the Bay and FoLAR, also play a role with activities including drain stenciling, education, outreach and creek and river cleanups.

**1. Trash Removal from Compton Creek**

As part of their regular maintenance activities, both the USACE and LACDPW-maintained portions of the Creek are cleaned periodically. Data made available by LACDPW reveal that 62.6 tons of trash were collected in the uppermost 2.12 miles of Compton Creek from September 2002 to September 2003, an average of 5.2 tons per month.

The significance of the trash volumes collected in Compton can be illustrated by comparing it with Dominguez Channel, a similar watershed. Compton Creek and the Dominguez Channel reside in adjacent watersheds encompassed by roughly similar land uses, are highly impervious, and receive approximately the same precipitation. The extremely high trash loading that occurs in Compton Creek is evidenced in the data collected by LACDPW (especially when one considers that Dominguez Channel is also heavily impacted by human activity, has a larger drainage area, and still carries much less trash). Upon examination of the total number of tons collected, no striking difference is noticeable between Compton Creek and Dominguez Channel. When the two sets of data are normalized according to length of the maintained channel, however, a significant difference is seen (Table 2-8).

**Table 2-8 Trash Collected by LACDPW  
(9/029/03)**

	<i>Compton</i>	<i>Dominguez</i>
Trash Collected (Tons)	62.6	48.7
Length of Maintained Channel (Miles)	2.12	6.82
Trash Collected (Tons / Mile)	29.52	7.14

Source: County of Los Angeles Department of Public Works

Much of the trash that accumulates in Compton Creek results from street litter that has traveled through storm drains into the channel. However, this is not the only source of trash in the channel. Intentional dumping of trash and debris into the creek is a major problem. When an incident of illegal dumping is reported, the trash or debris is removed by the agency or city that has jurisdiction in that specific location.

## **2. Earthen-Bottom Channel Grading/Compaction**

As noted above, the earthen-bottom portion of Compton Creek is periodically graded and/or compacted in order to reduce the threat of flooding. When compacted, trash and vegetation typically remains within the sediment and may find its way back into the water column and eventually the ocean. Grading and removal of sediment also results in the removal of significant amounts of trash that could otherwise flow downstream.

The USACE has graded the earthen-bottom section located just above the 91 Freeway, where Compton Creek changes from a concrete to earthen-bottom channel. The LACDPW is responsible for maintaining the earthen-bottom portion below the Crystal Park Casino. LACDPW compacts this entire section with tractors at least once a year. The level of trash accumulation in LACDPW's portion of the earthen-bottom channel is significantly lower than in the portion that the Army Corps maintains because much of the trash is trapped in the upstream vegetation.

## **3. Catch Basin Inserts**

One method for reducing the amount of trash that reaches the channel is to install catch basin inserts. A catch basin insert is any device that can be inserted into an existing catch basin and provides some level of runoff contaminant removal. Varying models of catch basin inserts can retain trash and debris, absorb carbon, remove aromatic hydrocarbons and heavy metals, and trap sediment, oil, and grease from stormwater runoff. The most frequent application for catch basin inserts in

the Watershed is to prevent trash from entering the storm drains. Catch basin inserts are designed with an overflow outlet, through which water exceeding the treatment capacity can escape without flooding the adjacent area.

The City of Los Angeles has begun an aggressive trash reduction program that includes both the implementation of institutional controls such as targeted public education and street sweeping, and installation of structural controls to achieve compliance with the trash TMDL that has been established for the Los Angeles River Watershed. The City of Los Angeles has already begun installation of approximately 400 catch basin inserts in the northeast portion of the Compton Creek Watershed. LACDPW is also installing screens in various catch basins, at more than 300 locations within the Watershed.

## **4. Fencing Repair and Graffiti Removal**

Throughout most of the Compton Creek channel, chain link fencing separates the right-of-way area from the vertical sides of the channel. The fencing serves an important safety function by preventing individuals from accidentally falling into the channel and also restricts access to the channel banks where it is determined to be unsafe to walk. Repair and maintenance of fencing is not only a safety issue but a water quality issue as well, as most of the illegal dumping into Compton Creek occurs where the fencing has been torn down.

LACDPW, USACE, and various city agencies work to monitor the condition of fencing along the creek. This task is especially difficult and expensive, because fencing that has been repaired is often destroyed again in only a matter of days. On one particular occasion, staff of the USACE found that fencing they had repaired in the morning had already been removed by the afternoon of that same day. According to officers working for Compton Municipal Law Enforcement Services, fencing is torn down by illegal dumpers and also by local gang members, who use the channel to move around covertly or to flee from police.



**Figure 2-11 Graffiti in the Compton Creek Channel**

Source: Los Angeles & San Gabriel Rivers Watershed Council

Although some forms may be considered an expression of public or street art, graffiti has been an increasing focus of law enforcement in the Los Angeles area over the past decade, as some graffiti may be related to gang activity. The City of Los Angeles is now spending over \$6 million a year to clean up graffiti from public sites, compared to only \$500,000 in 1993—an increase attributable in part to the fact that cleaning up graffiti has become a higher priority.

The City of Los Angeles runs a program called Operation Clean Sweep which provides a hotline (800-611-CITY) for residents to use when reporting graffiti. Work orders are referred to community-based graffiti removal programs contracted through Operation Clean Sweep. These agencies supervise community volunteers, as well as juveniles and adults who have received community service time from the courts. Work is performed for free using paint, chemical solvents or sandblasting, depending on the type of surface.

LACDPW has two graffiti abatement programs. The Totally Against Graffiti (T.A.G.) program helps kids learn about the costs and consequences of graffiti. The “Difference Between Art and Graffiti” program seeks out gifted young artists and offers them competitions, art classes, trips to art museums and workbook materials to help them define the difference between art and graffiti for their neighborhoods and peers. The two programs are sponsored by the Los Angeles County Board of Supervisors. There is also a hotline to report graffiti: 1-800-675-4357.

## 5. Vector Control

A vector refers to any organism that can transmit an infectious disease to another organism. This includes mosquitoes, flies, other insects, ticks, mites, and rats—but does not include any domesticated animals. Responsibility for controlling vector-borne diseases typically belongs to city or county vector control districts. There are three vector control districts in the watershed: Compton Creek Mosquito Abatement, Greater Los Angeles County Vector Control, and Los Angeles County West Vector

Control, as shown in Figure 2-12. Control of mosquitoes is the primary activity of vector control agencies that affects watershed management.

## H. SOLID WASTE MANAGEMENT

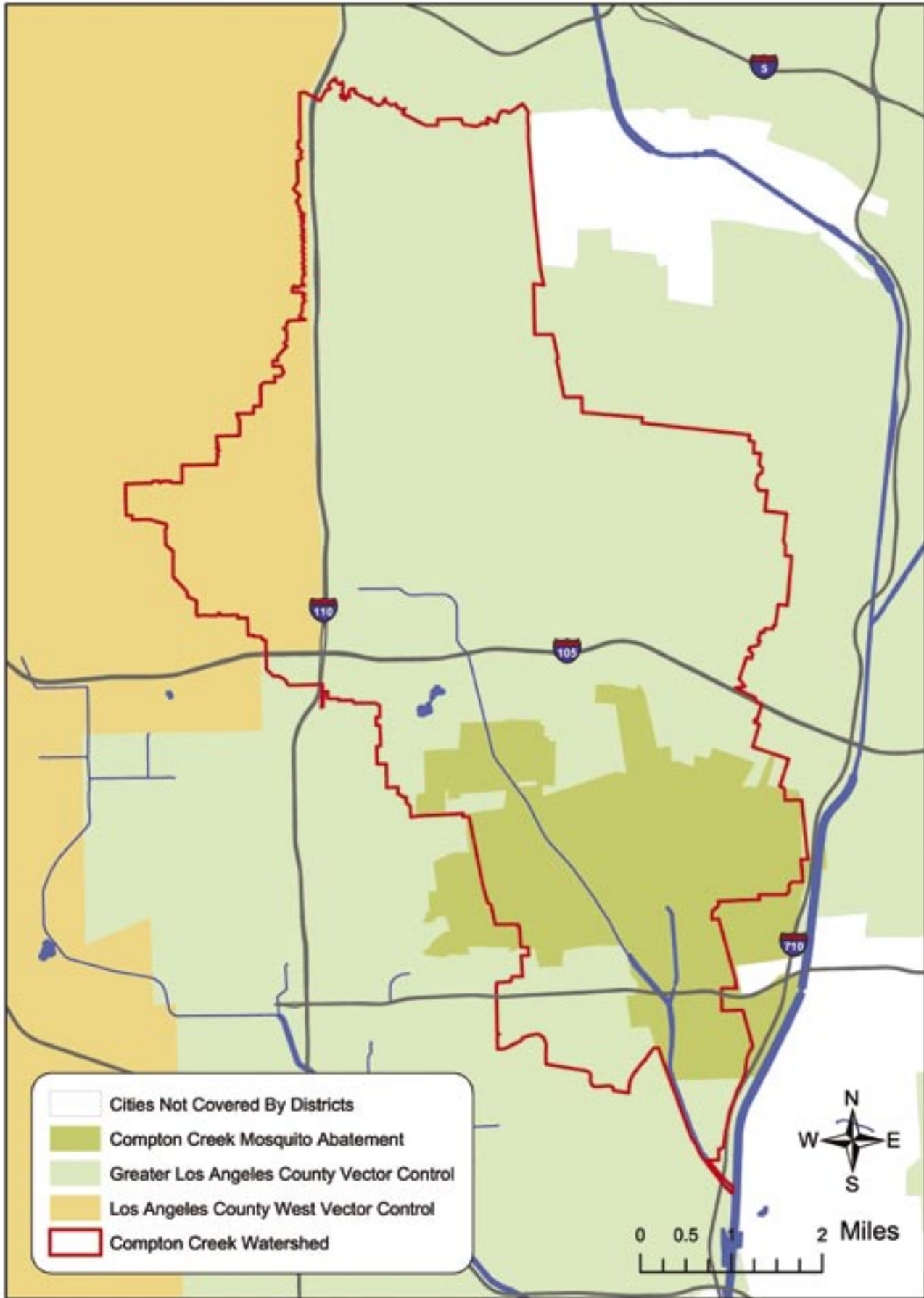
### 1. Integrated Waste Management Act

In the fall of 1989, the California Integrated Waste Management Act (also known as Assembly Bill or AB 939) was signed into law to address the problem of increasing solid waste generation and decreasing landfill capacity. The Act mandated that each city in California meet solid waste diversion goals of 25% by 1995 and 50% by the year 2000. AB 939 set out the following preferred approach for dealing with waste, in order of preference: source reduction, recycling and composting, environmentally safe transformation, and lastly landfill. The law also required each city and county to prepare a Source Reduction and Recycling Element to identify how each jurisdiction would achieve the AB 939 mandates. Subsequent legislation (AB 2494) further defined the reporting requirements for updating the plan.

### 2. Waste Management Services

The County and the cities in the Compton Creek Watershed, except for Long Beach and Los Angeles, use private contractors for their trash collection. Neither the County nor any of the cities, except Los Angeles, have their own transfer stations. Most of the cities and the County send their trash to the Puente Hills Landfill, except Long Beach, which send its trash to the Southeast Resource Recovery Facility in Long Beach. The distance from pick up to disposal may be up to 25 miles.

There are two recycling facilities in the Watershed, located in the cities of Commerce and Long Beach. All cities except Carson have a solid waste management plan to meet state mandate AB939. The County and the cities in the Watershed (except Carson and Lynwood, both of which contract with Nationwide Environmental Services), maintain their own street sweeping schedule and monitor related activities. The County and all cities have varying programs for picking up oversized items.



**Figure 2-12 Vector Control Districts**

Source: Greater Los Angeles County Vector Control; street and hydrology data from GDT © 2003

### 3. Illegal Dumping, Monitoring, & Enforcement

Illegal dumping of trash, household goods and construction debris is a serious problem throughout the Watershed and especially in Compton Creek itself. Homeless encampments along the Creek that generate trash and human waste also contribute to illegal dumping. Enforcement of illegal dumping laws in and around Compton Creek is handled by city police or sheriffs, or the County Sheriff within their respective jurisdictions. The City of Compton's Municipal Law Enforcement Services agency has developed the "Compton Creek Dumping Surveillance Detail," which seeks to curtail dumping into the Creek by conducting regular inspections along the Creek, apprehending dumpers when possible, and reporting trash and debris whenever new deposits are encountered. Currently, three Code Enforcement Officers are assigned to conduct at least two inspections per day. When illegal dumpers are apprehended and their sentencing includes a requirement to complete community service, it is requested by the city that the community service take the form of cleanup activities in Compton Creek. Additionally, in 2004 the Compton City Council approved an ordinance giving the Compton Sheriff's Department authority to seize the vehicle of any individual caught dumping refuse of any kind within the City's limits.

As part of Operation Clean Sweep, the City of Los Angeles operates the Nuisance Alley Conversion Program, which approves the closure or gating of nuisance alleys. A nuisance alley is defined as being plagued by illegal dumping, criminal or gang activity. The closure improves the appearance of the area and creates a secure space for the residents to enjoy.

### 4. Hazardous Waste Management

Several programs have been developed to manage common household hazardous wastes such as paint, batteries, anti-freeze, motor oil, and solvents. LACDPW began conducting Household Hazardous Waste Roundups jointly with the Sanitation Districts of Los Angeles County in 1990 and continues to do so. The City of Los Angeles Sanitation Bureau and LACDPW also conducted Household Hazardous Waste Roundups from January

1989 until replaced by a Mobile Program in February 1994. The Mobile Collection Program (Hazmobile) was implemented to better service households by offering more convenient days and locations for proper disposal or recycling of household hazardous waste. Hazmobile consists of trucks and trailers that travel to locations throughout the City of Los Angeles for one or two weeks each year to collect waste from residents.

The City of Los Angeles Bureau of Sanitation, UNOCAL Corporation, and American Oceans Campaign teamed up to establish a program where used motor oil is collected and re-refined. The program is made possible by grants from the California Integrated Waste Management Board.

## I. WATER SUPPLY

### 1. Sources of Water

Local sources of water for the Compton Creek Watershed include groundwater and recycled water. These supplies are supplemented with imported supplies from Northern California (via the State Water Project), the eastern Sierra (via the Owens Aqueduct), and the Colorado River (via the Colorado River Aqueduct). Specific sources and suppliers vary depending on the jurisdiction.

The Los Angeles Aqueduct, which transports water from the Owens Valley and Mono Lake, provides about 65% of Los Angeles' water supply, and local groundwater sources provide about 15%. The bulk of the remaining 20% comes from the Colorado River Aqueduct and the State Water Project, through the Metropolitan Water District of Southern California (MWD), a water importer and wholesaler. The City of Compton purchases about half of its supply from MWD while the City of Long Beach purchases about 42%, with the remainder coming primarily from local groundwater.

### 2. Water Conservation and Reuse

Most of the local water agencies serving the Watershed promote a variety of programs to encourage water conservation and reuse. MWD has stated that as much as 50% of the water now used in the residential sector could be cost effectively conserved with existing technology.

The City of Los Angeles has grown by a million people in the last 20 years, yet still uses the same amount of water. A few of the programs available include the following:

- Ultra-Low Flush Toilets and showerheads are now required in new construction, and in Los Angeles when a home changes ownership. Community groups and schools have been very successful in replacing old toilets through local programs that give incentives to those who do the job.
- Landscaping/gardening: MWD promotes changing our landscape and gardening materials to those more suited to this climate, to plants that will flourish during dry summers and wet winters, with an emphasis on native plants. They offer training for those who care for large landscapes, and are working with many community groups such as the Rancho Santa Ana Botanical Gardens, the Theodore Payne Foundation, the California Native Plant Society, and the Los Angeles & San Gabriel Rivers Watershed Council.
- Irrigation: pilot programs for the installation of automatic sprinkler controllers to regulate irrigation at homes, without any changes to landscape materials, have shown that 25% to 28% of irrigation water can be saved without harming existing landscaping (for more information see [www.bewaterwise.com](http://www.bewaterwise.com)).

Recycled water is provided by the Central Basin Municipal Water District for industrial uses and municipal landscape irrigation. Central Basin Municipal Water District is currently expanding their network of recycled water pipelines in the southern portion of the Watershed, including Rancho Santa Dominguez, Carson, Compton, Rosewood, and Willowbrook. They are also expanding their system and adding pumps to the northeast of the Watershed, in the cities of Vernon, Huntington Park, South Gate, and Lynwood.

### 3. Wastewater Management

Wastewater from homes and businesses are delivered to wastewater treatment plants called Publicly Owned Treatment Works. There the sewage is treated to secondary standards before discharge into the ocean, and

to tertiary standards before discharge to rivers or streams. There are two wastewater treatment systems that serve the Watershed, both of which are located outside of the Watershed.

- Sanitation Districts of Los Angeles County Joint Water Pollution Control Plant in Carson serves a population of approximately 3 1/2 million people throughout Los Angeles County and provides full secondary treatment to approximately 350 million gallons of wastewater per day.
- City of Los Angeles' Hyperion Sewage Treatment facility, located just south of Los Angeles International Airport, serves a population of approximately 4 million people. It provides full secondary treatment for up to 450 millions of gallons of wastewater per day.

There are also scattered areas where homes are served by septic systems that direct wastewater into a concrete tank underground at the home site, from which untreated wastewater then is allowed to percolate into the ground. The locations of these areas are well away from the earthen-bottom portion of the Creek and would not be expected to impact surface water quality.

## J. LAND USE

### 1. Land Use Types

The Compton Creek Watershed is highly urbanized, where less than 3% of the land is either vacant or open space (SCAG 2000). Of the approximately 42 square miles in the watershed, about 62% of the land is used for residential purposes and most of the remaining land is used for commercial and industrial purposes (Figure 2-13). More than half of the residential areas are single-family homes (Table 2-9)

The highest density residential areas occur in the northwestern portion of the watershed, while single-family residences tend to occupy the southern and eastern areas. Industrial uses are mostly located along the Alameda corridor or the southernmost portion of the Watershed.

**Table 2-9 Land Use in the Compton Creek Watershed**

<i>Land Use</i>	<i>Square Miles</i>	<i>Acreage</i>	<i>Percentage</i>
Multi-Family Residential	1.94	1244	4.6
Mixed Residential	8.59	5495	20.4
Single-Family Residential	14.94	9562	35.5
Commercial and Services	6.41	4102	15.2
Industrial	5.62	3598	13.4
Communication & Utilities	0.32	205	0.8
Transportation	2.15	1373	5.1
Hydrology	0.16	101	0.4
Agriculture	0.18	116	0.4
Vacant	0.54	345	1.3
Open Space and Parks	0.68	433	1.6
Other	0.53	337	1.3
Total	42.05	26911	100

Source: Southern California Association of Governments, 2000

Parks and open space are very limited within the Watershed, with less than 0.6 acre of park per one thousand persons. Although city and county goals for acres of parkland per thousand people vary, existing parkland is well below these goals, which include a minimum standard of 4 acres per thousand people. Magic Johnson Park is the largest of the forty-six parks in the Watershed at 103 acres. There are twelve parks larger than 10 acres, eight parks that are 5 to 10 acres in size, and twenty-six parks occupying less than 5 acres. The northwestern portion of the Watershed has the highest population density and the fewest parks. Schools also provide additional pockets of open space throughout the Watershed (Figure 2-14).

## 2. Major Land Owners

Most of the largest land holdings are either publicly owned (mostly schools and parks), or owned by large corporations whose corporate offices are typically located outside of the Compton Creek Watershed. The table below shows the ownership of the 200 largest parcels in the Watershed (Table 2-10).

The remaining parcels are owned by various other public and private entities.

## 3. Transportation

There are approximately 880 miles of roadway within the Watershed, with an approximate density of 20.9 linear miles within each square mile of the Watershed. Roadways are generally paved, and thus impervious. It is possible that some underutilized roadways exist in the watershed, i.e. streets that are wider than necessary for their level of use. These could be redesigned to provide permeable green spaces, medians, or expanded pedestrian amenities. There are over 50 miles of developed bike paths, lanes, and routes within or connecting the Compton Creek Watershed (Figure 2-15). One dedicated pedestrian pathway exists on the Graham Elementary School. The City of Compton has developed a bikeway on the east side of Compton Creek and plans to develop an equestrian trail on the west side of Compton Creek between the northern municipal boundary at El Segundo Boulevard and Greenleaf Boulevard.

**Table 2-10 Major Landowners in Compton Creek Watershed**

<i>Property Owner</i>	<i>No. of Parcels</i>
Los Angeles Unified School District	22
Compton Unified School District	20
City of Los Angeles	19
County of Los Angeles	16
City of Compton	8
Lynwood Unified School District	3
AMB Property	7
South Bay Industrial Co LLC	7
Southern Pacific Transportation Company (BNSF Railroad)	6
Southern California Edison Company	4
Watson Partnership LP	4

Source: Compiled by Los Angeles & San Gabriel Rivers Watershed Council

**K. HABITAT AND OPEN SPACE**

This section addresses both existing open space and habitat in the Watershed, and the potential to create or enhance those uses within the urban fabric. It is the result of field surveys by LASGRWC staff to the Creek, to schools, parks, and other open areas in the Watershed, as well as examination of maps and aerial photographs. Much of the Watershed was formerly a marshland draining to the Los Angeles Harbor. Portions of the channel have been purposely left unpaved because of a high water table and groundwater upwelling. Therefore there is significant potential for restoration of wetlands habitat in the context of an urban environment. Moreover, there is strong community interest in developing habitat parks with natural landscapes and trails in the upper Watershed. Additional parkland is in various stages of the planning process within unincorporated areas and the cities of Compton and Los Angeles, with support from the RMC and other funding sources.

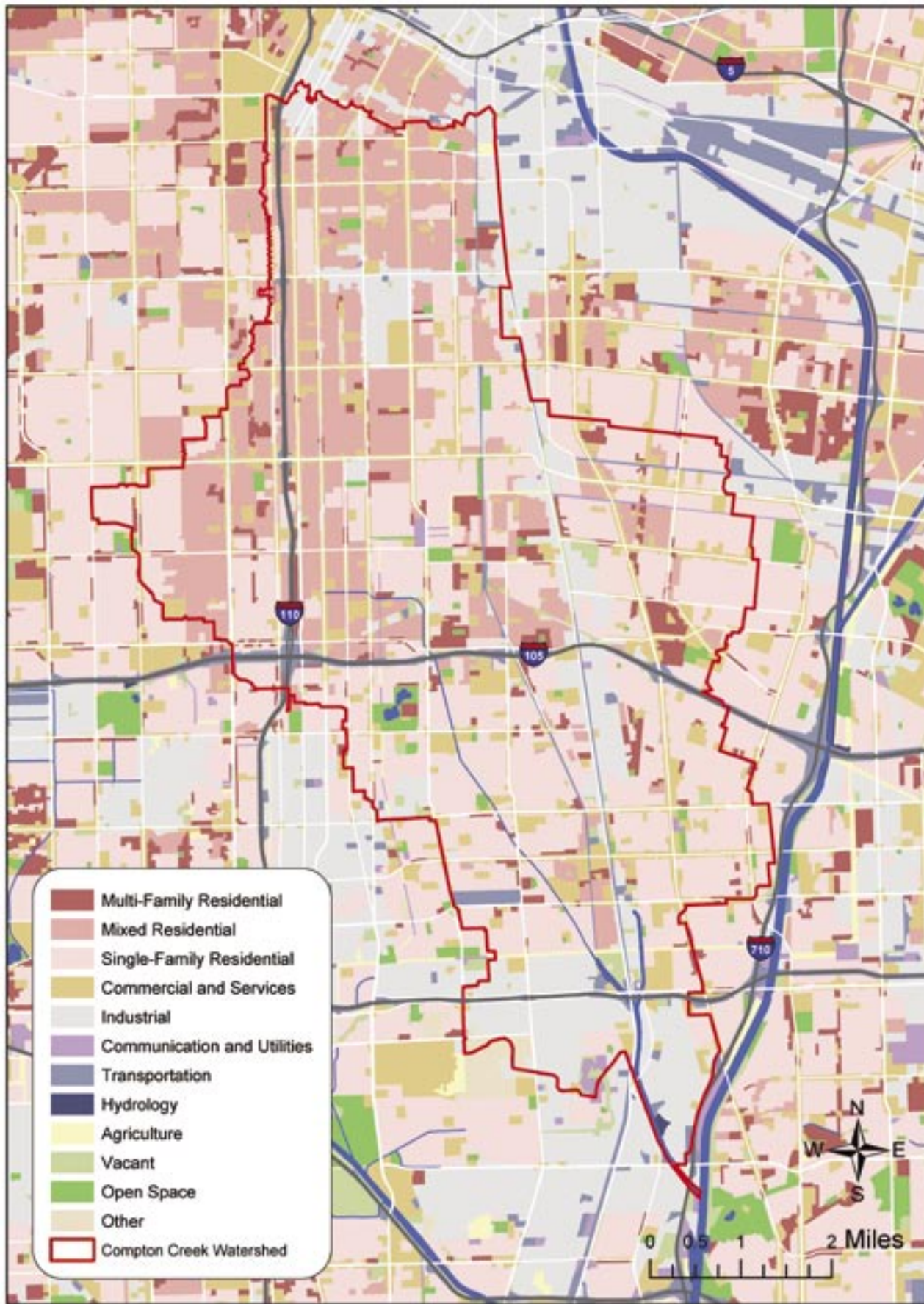
**1. Parks**

There are currently forty-six parks within the Watershed. Parks and open space constitute a total area of 433 acres. With more than 700,000 residents in the Watershed, this provides under 0.6 acre of parkland per 1,000 residents, well below some standardized parkland ratios which

range from 4 to 10 acres per thousand. Some parks are dominated by turf grass with fields for active recreation, such as soccer, baseball, and football. Others only have passive recreation areas. Landscaping in most of the parks is limited to trees, plantings, and turf grass. These plantings are usually common landscape species associated with public open space in the Los Angeles region, with few, if any native species present. Thus, most existing parks provide little habitat for native species, with the exception of birds and other species commonly associated with urbanized areas.

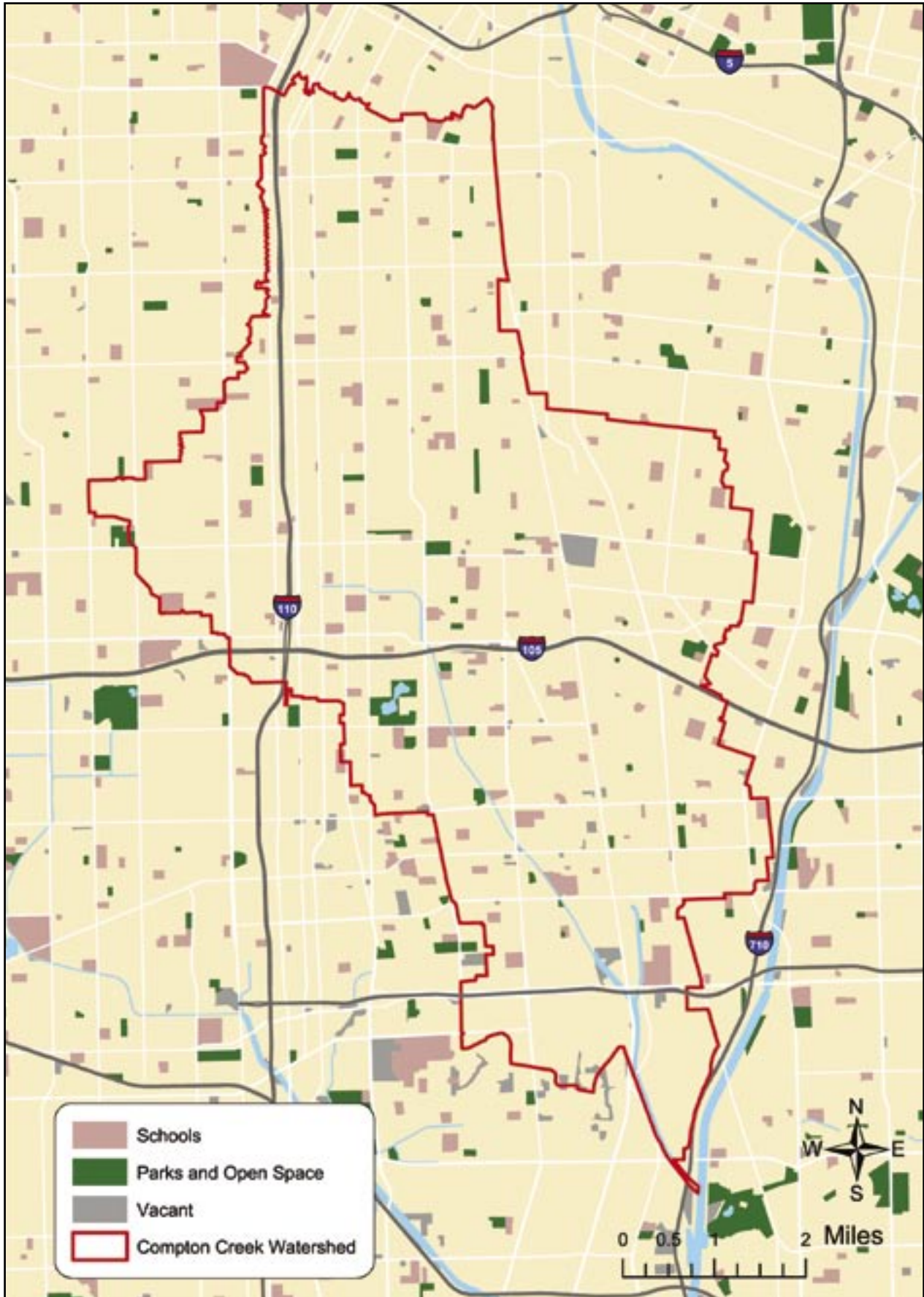
In some parks, plantings tend to be placed in areas that discourage or minimize the use of grassy areas for anything other than passive activities. Earvin Magic Johnson Park in Willowbrook and South Park in South Los Angeles are examples of plantings being used to discourage any active uses. Strategically placed trees and large rocks disrupt open areas where impromptu team sports games might otherwise occur.

The Augustus F. Hawkins Natural Park on Compton Avenue at Slauson is a good precedent when considering the development of wetland and riparian areas in other upland areas within the Watershed. Augustus F. Hawkins Natural Park is also an excellent example of collaboration between governmental agencies and the surrounding community. Once a cement pipe storage yard, the 8.5-acre



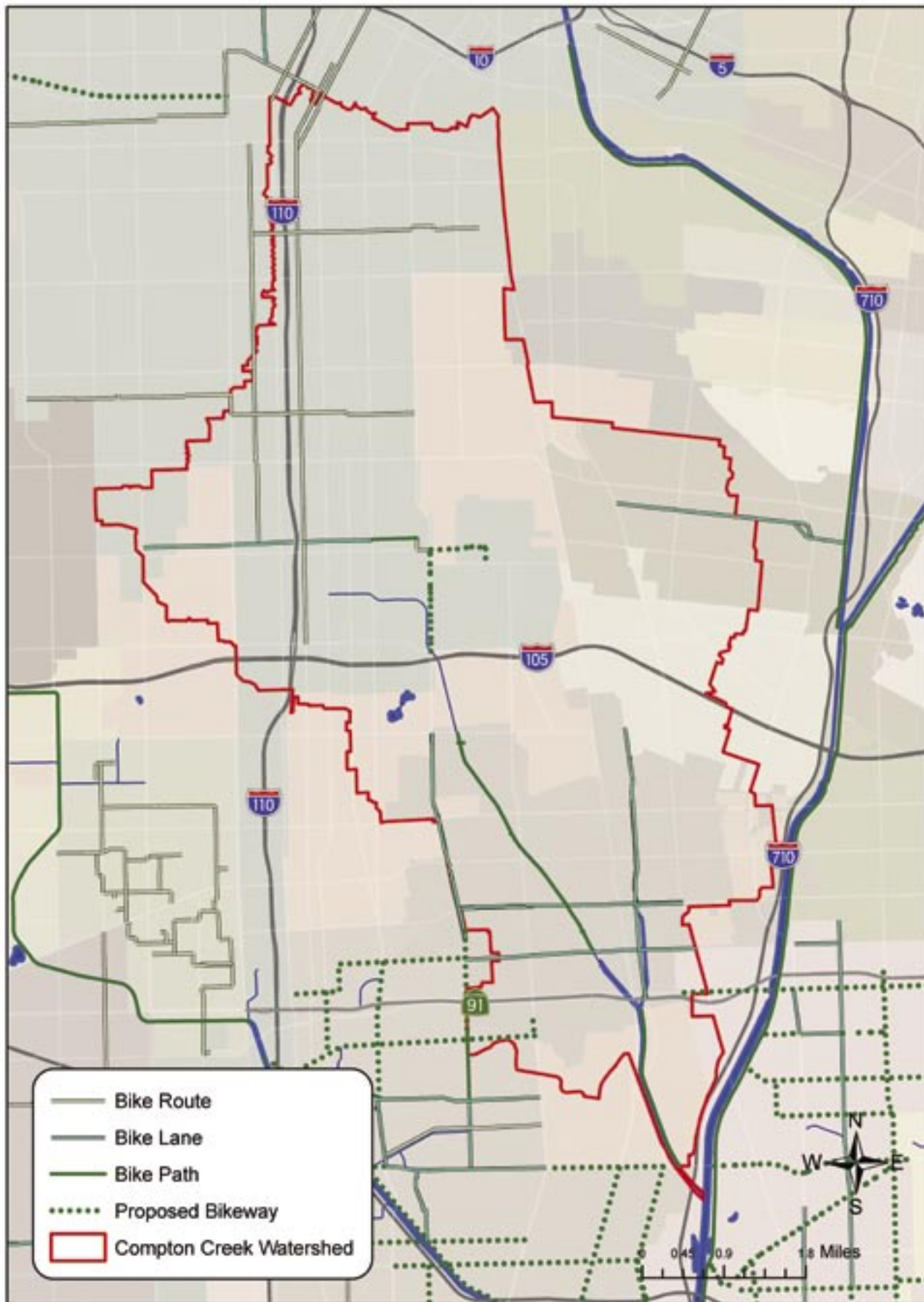
**Figure 2-13 Land Use in the Compton Creek Watershed**

Source Data: Southern California Association of Governments 2000 land use; other from GDT © 2003



**Figure 2-14 Schools, Parks, and Open Space**

Source Data: Southern California Association of Governments 2000 land use, other from GDT © 2003



**Figure 2-15 Bike Paths, Lanes, and Routes**

Source Data: Los Angeles & San Gabriel Rivers Watershed Council, Basemap data from GDT © 2003

park is planted with native species and includes a number of native habitats. It also hosts numerous interpretive and learning programs for the local community (Figure 2-16). With the assistance of Prop 13 grant funds, the City of Los Angeles Bureau of Sanitation Watershed Protection Division is constructing a wetland habitat in this park that will consist of two elements: a freshwater marsh wetland and surrounding riparian vegetation.

Magic Johnson Park, at 103 acres, is the largest park within the Watershed. There are extensive open areas, playing fields, picnic tables, a playground, and two concrete-edge ponds that are stocked several times a month with catfish, trout, and bass. The presence of the ponds attracts various bird species to the park. During a site visit, a pair of red tail hawks was identified on the island along with gulls, white geese, coots, and mallards.

## 2. Schools

The Watershed currently has 150 schools, including 108 elementary schools, 23 middle schools, and 19 high schools, with various proposals for additional schools. The Los Angeles Unified School District (LAUSD), which operates schools within the City of Los Angeles, unincorporated areas of Los Angeles County, South Gate, Huntington Park, and Carson, has 30 school construction projects planned within the coming years. Twenty of the 30 projects will be new schools, while the remaining will be expansions and retrofits. School property comprises 1,214 acres, or about 5% of the total area within the watershed. Elementary schools, middle schools, and high schools make up 620 acres, 328 acres, and 266 acres, respectively. Not all school property is being used. A review of aerial photos and field visits suggest that open



**Figure 2-16 Augustus Hawkins Natural Park**

Source: Los Angeles & San Gabriel Rivers Watershed Council

fields in many schools, especially at the elementary and middle schools, may be underutilized. These fields may provide an opportunity to reconnect students with the land and native habitat through gardening programs. The Prisk Botanic Garden at Prisk Elementary School in Long Beach is an example of the transformation of a former parking lot into a nature center with five native plant communities and a vegetable garden.

Cool Schools is a six year old program introduced by the City of Los Angeles Department of Water and Power (DWP) in which they solicit the help of environmental organizations to work with LAUSD. Cooperating organizations include the Los Angeles Conservation Corps, North East Trees, and TreePeople. Cool Schools works to strategically plant trees at Los Angeles school campuses to conserve energy, beautify campuses, and teach students about the environment and the benefits of trees. A handful of reading gardens have also been created through the program. The gardens serve as special outdoor classrooms that tutors and students use to work on reading skills. There are 12 schools participating in the Cool Schools Program in the Compton Creek Watershed since the program was launched in 1998.

### 3. Vacant Lots

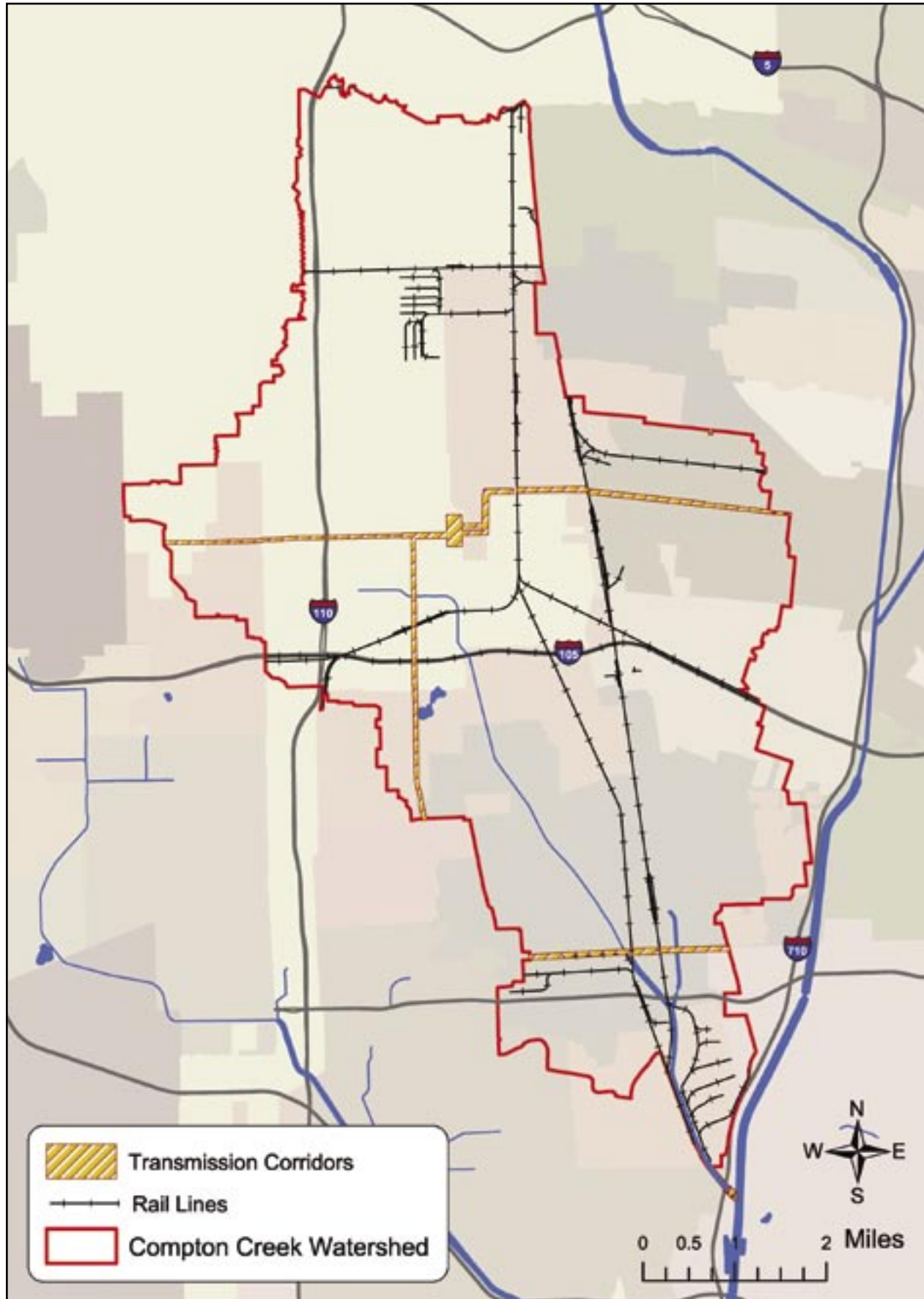
A number of vacant lots exist in the Watershed. Many are located in residential neighborhoods and are currently covered with weeds and trash, which limits their value as open space and native habitat. Although many of these lots may be best utilized to provide needed housing for Watershed residents, some locations may represent opportunities for small neighborhood parks or native habitat restoration. In some locations, former industrial uses may have resulted in site contamination which requires remediation before this land could be used for other purposes, including commercial or residential development, or the creation of much needed open space. At some locations, public agencies own parcels but are not currently using them. These parcels provide additional opportunities to create green spaces that provide open space for residents and habitat for native species.

### 4. Transmission Line Corridors

Three transmission line corridors cross the Watershed. One runs generally east/west through the Watershed and roughly bisects it. A second transmission corridor lies just east of and parallels Avalon Boulevard in the southern half of the Watershed. It joins with the East/West corridor at 98th Street. The third transmission corridor crosses the southern portion of the Watershed. It lies south of Greenleaf Boulevard and connects the transmission corridor that runs along Avalon Boulevard to the transmission corridor that runs along the Los Angeles River to the east of the Watershed. The corridor along Avalon Boulevard creates an open space corridor, most of which is currently weedy fields. Local residents have created community gardens under these power lines and established unofficial recreation sites. The entire corridor along Greenleaf Boulevard is leased for nursery operations. Portions of the 98th Street/Southern Avenue transmission corridor are used as linear parks and agriculture. These are good examples of local use of a public resource. These open spaces represent an excellent opportunity to expand community gardens and community trails for local residents, create recreation space and/or habitat, and enhanced groundwater recharge, and relieve the utilities from the yearly mowing, trash pickup and other maintenance now required. Figure 2-17 shows the location of transmission line corridors in the Watershed.

### 5. Railroad Corridors

Various railroad lines cross the Watershed from the Los Angeles and Long Beach harbors to downtown Los Angeles (the Alameda Corridor), to Los Angeles International Airport and other industrial areas (Figure 2 17, above). The Metro Blue and Green (rail transit) lines also cross portions of the Watershed. Some locations along the Alameda Corridor and the Blue and Green Lines are vegetated, although most of the freight line corridors are not vegetated. The green spaces along existing rail corridors could be extended and expanded, while rail freight lines provide opportunities to increase green space in the Watershed or to create greenbelts between open



**Figure 2-17 Transmission and Rail Corridors**

Source Data: Los Angeles & San Gabriel Rivers Watershed Council, Basemap data from GDT © 2003

spaces and parks, particularly if those lines are no longer needed for freight operations and might be candidates for land acquisition.

## 6. Community Gardens

Community gardens provide opportunities, in a communal setting, for those who do not otherwise have space for gardening. The patchwork of existing community gardens in the Watershed provides opportunities for residents to grow their own food, provide for passive recreation, attract wildlife (such as birds and butterflies), demonstrate the value of using open space, landscaping, and mulch-covered spaces to contain runoff and reduce stormwater runoff, provide opportunities to learn about how composting can reduce the volume of green waste deposited in landfills and how native plants can be incorporated into urban settings. Most of these gardens are only an acre or two in size and are located on publicly owned land, including the land under high-power electrical transmission lines.

A number of organizations assist communities in the development, organization, and operations of community gardens. The University of California Cooperative Extension has established the Common Ground Gardening Program that makes gardening possible for residents of all ages. *Common Ground* is comprised of Master Gardeners (who present seasonal workshops), Master Food Preservers (to show how to store and preserve a garden's bounty), and the Gardening Angels school garden program (which works with teachers to provide hands-on gardening activities to complement curricula and create gardens on school grounds).

## 7. Street Trees

The location, extent and health of street trees throughout the Watershed varies. Street trees are typically planted in the parkway between the sidewalk and the street, or in planting pockets located within the sidewalks. In some neighborhoods, street trees are numerous and provide extensive areas of shade and contribute to the overall visual character of neighborhoods. In other neighborhoods, or along major streets, there are few or no trees, creating a somewhat bleak visual appearance, without any shade for

pedestrians and no locations for birds to roost and nest.

Planting street trees provides an excellent opportunity to involve the community in beautifying neighborhoods. Residents can be involved in tree selection as a way to develop a community identity, learn urban forestry from such organizations as TreePeople, and increase their appreciation of the environment. Street trees may also create opportunities for habitat connections between the Creek and other open spaces. In addition to habitat and educational benefits, large-scale tree planting efforts can help water quality if the trees are planted according to biofiltration or other water quality improvement specifications.

## 8. Wetland and Riparian Areas

Compton Creek itself is currently the only example of a wetland/riparian area within this Watershed. Biological resources are discussed in two zones: the earthen-bottom area (wetland) and the channel right-of-way (riparian). Surveys were conducted for vegetation and avian species, but not reptile and mammal species. Assumptions concerning the presence or absence of those species are based on the availability of appropriate habitat.

### ▣ Earthen-Bottom Areas

The earthen-bottom section of Compton Creek begins at the Crystal Park Casino just above the 91 Freeway and runs nearly to the confluence with the Los Angeles River. Field visits were conducted in this area by LASGRWC staff in July 2002 to map the vegetation in and around the channel. Wildlife survey information is summarized from a 2002 report by Bloom, Niemela, and Eastman. These surveys were confined entirely to the lower earthen-bottom reach of the Compton Creek channel.

### Vegetation

Vegetation in the earthen-bottom section is mainly characterized as disturbed vegetation comprised of weedy riparian species with a few native species. Invasive species include wild radish (*Raphanus sativus*), knotweed (*Polygonum* sp.), cocklebur (*Xanthium strumarium*), ox

tongue (*Picris echioides*), sweet-clover (*Melilotus albus*), sow-thistle (*Sonchus sp.*), and English plantain (*Plantago lanceolata*). Native plants observed included cattails (*Typha latifolia*), mule fat (*Baccharis salicifolia*), and some types of rushes. The LACDWP recently completed a bike path project and an Earth Day event that included planting native species. *Platanus racemosa*, *Heteromeles arbutifolia*, *Cercis occidentalis*, *Muhlenbergia rigens*, *Salvia apiana*, and *Festuca l.* “Tomales Bay” were planted along the earthen-bottom section of the Compton Creek. These native plantings are an example of institutional commitment to the Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes which promotes use of native plants in projects within the County right-of-way.

### Wildlife

The most abundant bird species recorded in this thickly vegetated channel was red-winged blackbird (*Agelaius phoeniceus*), with up to 90 birds recorded on a single survey occasion. Territorial males were observed approximately every 10 meters of the channel. Other birds include relatively high numbers of killdeer (*Charadrius vociferus*) (52), European starling (*Sturnus vulgaris*) (65), common yellowthroat (*Geothlypis trichas*) (42), mallard (*Anas platyrhynchos*) (35), and black-necked stilt (*Himantopus mexicanus*) (24). This earthen-bottom channel supported the highest numbers and diversity of wading birds among all sites of Compton Creek, including three great blue herons (*Ardea herodias*), three great egrets (*Casmerodius albus*), four snowy egrets (*Egretta thula*), four green-backed heron (*Butorides striatus*), and one black-crowned night-heron (*Nycticorax nycticorax*).

Although these were not surveyed, reptile species that may be present within the earthen-bottom section are anticipated to include the legless lizard (*Anniella pulchra*) and western skinks (*Eumeces skiltonianus*). Species potentially present along the bank and channel right-of-way include side-blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus occidentalis*), and Southern alligator lizard (*Gerrhonotus multicarinatus*).

### Channel Right-of-Way

Along the earthen-bottom section of the channel, the top of the western channel bank (or right-of-way) is mostly unpaved. South of the 91 Freeway, the east bank of the channel is a Los Angeles County–maintained bikeway that runs south to Del Amo Boulevard. The west bank of the channel is an unpaved access road. South of Del Amo Boulevard, both sides of the channel have paved access roads, which end at the 710 Freeway just before the confluence with the Los Angeles River.

### Vegetation

The paved roads between the Casino and the Compton Creek/Los Angeles River confluence have been planted with a number of mostly Australian tree species, including eucalyptus (*Eucalyptus sp.*), silky oak (*Grevillea robusta*), *Melaleuca nesophila*, and other exotic species, such as Brazilian pepper (*Schinus terebinthefolius*). Native species include sycamores (*Platanus sp.*), Fremont’s cottonwood (*Populus fremontii*), Mexican elderberry (*Sambucus mexicana*), and lemonadeberry (*Rhus integrifolia*). Some exotic invasive species were present in abundance, including castor bean (*Ricinus communis*), tree-of-heaven (*Ailanthus altissima*), tree tobacco (*Nicotiana glauca*), and passion flower (*Passiflora sp.*). Several areas were heavily infested with castor bean to the exclusion of nearly all other species. Brisbane box (*Tristania conferta*) lined the right-of-way adjacent to the Metro Station at Del Amo Boulevard. Cat’s claw (*Macfadyena unguis-cati*) planted along the LACDA walls, is thriving between Del Amo Boulevard and the Compton Creek/Los Angeles River confluence.

The absence of power line towers along Compton Creek, which typically limits tree heights, presents an opportunity for large trees to be planted along the upper channel in order to produce shade for bicyclists and pedestrians. Along some portions of the creek, the area remaining after trail construction may leave little room for trees or shrubs.

## Wildlife

Many of the same species using the earthen-bottom section of the river would also use the channel right-of-way. Red-winged blackbirds, mourning doves (*Zenaida macroura*), pigeons (*Columba livia*), and great blue herons were present in the field survey. Because this area is largely paved, the habitat needed to support most wildlife species with food, nesting, and cover vegetation does not exist. Additional native vegetation along the right-of-way would enhance the area for use by wildlife.

### 9. Wildlife in the Watershed

#### ▣ Birds

Beyond the Creek, most common species of birds found in urbanized Los Angeles would be expected in the Watershed. These species include crows (*Corvus brachyrhynchos*), pigeons (*Columba livia*), mourning doves (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), Northern mockingbird (*Mimus polyglottos*), California towhee (*Pipilo crissalis*), and scrub jay (*Aphelocoma coerulescens*). A number of introduced opportunistic species are also present, including rock dove (*Columba livia*), starlings (*Sturnus vulgaris*), house sparrows (*Passer domesticus*), house wren (*Troglodytes aedon*), and bushtits (*Psaltriparus minimus*).

A number of wintering birds also utilize the area during migration including Townsend's warbler (*Dendroica townsendi*), yellow-rumped warbler (*Dendroica coronata*), lesser goldfinch (*Carduelis psaltria*), white-throated swifts (*Aeronautes saxatalis*), and cliff swallows (*Hirundo pyrrhonota*) under bridges. Cooper's hawks (*Accipiter cooperii*) are surprising residents in urban areas and may nest in older urban areas with large trees. The addition of street trees would attract wildlife, especially birds, to the Watershed.

#### ▣ Mammals

A number of opportunistic mammal species would also be expected within the Watershed. Among these are species common to urbanized areas, including striped skunks (*Mephitis mephitis*), possums (*Diadelphus virginiana*), house mouse (*Mus musculus*), Norway rats (*Rattus norvegicus*), roof rats (*Rattus rattus*), fox squirrels (*Sciurus niger*), and raccoons (*Procyon lotor*). All these species flourish in urban situations and find nesting habitat in storm drains, beneath building floorboards, in walls, crawl spaces, brush piles, in culverts, under decks, and in attics. Garbage cans provide readily available food sources. Some species have higher populations in urban areas than in wild lands due to the increase in nesting habitat and readily available food sources. Raccoons, a highly adaptable species, have populations that tend to be highest in urban and suburban areas.

#### ▣ Reptiles & Amphibians

A number of lizards have adapted quite well to urban environments. Species that could be present within this urban setting include: side-blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus occidentalis*), and Southern alligator lizard (*Gerrhonotus multicarinatus*).

### L. IDENTIFIED DATA GAPS

A more thorough understanding of water quality conditions in the Watershed is needed in order to address specific solutions to improve water quality and restore habitat. As mentioned previously, additional monitoring is needed to better assess the water quality for both listed and non-listed constituents, and existing habitat conditions in the Creek. This is discussed in more detail in Chapter 6. The Steering Committee's recommendations included more dry and wet season sampling, additional storm drain snapshot surveys such as that conducted by LACDPW in 2003, flow measurements for proper modeling of pollutant loads, and sediment sampling in the lower Creek.

Specific sources of pollutants are also poorly understood. While general conclusions may be drawn as to sources of pollutants based on land use or discharge permits, specific data are not yet available. In order to implement corrective measures to improve conditions in the Creek, a number of additional studies could be undertaken:

Further analysis of NPDES listed Creek dischargers under the general industrial permit (location, pollutants discharged, etc.) to better characterize their potential contribution to water quality impairments

- Age of housing stock, to evaluate potential as a source of lead from paint
- Source identification (based on land use analysis and NPDES permittees) for impairments found in future storm drain outlet water quality sampling
- Flow data to assess total pollutant loads to the Los Angeles River
- Modeling to evaluate various management options

Also, a more complete inventory of programs and groups working in the Watershed would provide a starting point for Plan implementation. The effectiveness of existing efforts, such as Compton's anti-dumping ordinance or recycling participation rates, would help inform development of new programs and services.