



# APPENDIX I Appendix to the Natural Resources, Conservation, and Open Space Element

## Existing Conditions

The Planning Area is defined historically, topographically, and ecologically by its river, valley, hillsides, and mountains. The ESGV is characterized by constructed drainage channels and creeks that drain into San Gabriel River and connect across communities. The San Gabriel Mountains, Puente Hills, and San Jose Hills contain ridgelines, natural canyons, and drainage channels that provide wildlife habitat and connectivity corridors, connecting to preserved lands in San Bernardino County. These areas contain significant ecological resources and allow for free-flowing drainage from the hillsides into canyons. The hillside areas also contain vast trail networks for hiking, biking, and equestrian uses. Scenic views and experiential aspects of these natural environments are highly valued assets of the region.

This section examines the existing conditions within the Planning area by resource type as they relate to this Natural Resources, Conservation, and Open Space Element.

## A. OPEN SPACE RESOURCES

Open space resources consist of largely undeveloped publicly and privately held lands and waters preserved in perpetuity for open space, recreational, conservation, and educational use. Open space resources in the ESGV consist of lands whose primary purpose is habitat preservation allowing for passive recreation as determined by the sensitivity of the resources present. Such lands include Los Angeles County (County)-owned parks and managed trails, public parks and trails owned and managed by joint-powers authorities, national forest lands, and lands owned by nonprofit conservation organizations. Additionally, lands subject to recorded easements or deed restrictions for open space purposes may allow passive recreational use in line with the limitations established for the site by the terms of the applicable easement or deed restriction. A summary of open space resources and their managing agencies and organizations in the Planning Area follows.

### County-Owned and Operated Open Space

The open spaces owned and maintained by the Los Angeles County Department of Parks and Recreation (DPR) include natural areas and regional parks with significant natural resources. Regional parks are defined as parks of 20+ acres in size, intended to serve people within a 20-mile radius and provide scenic views, trails, and vistas in addition to more common park amenities. Regional parks conserve natural resources. They combine habitat conservation with passive recreation, allow active recreation in developed park space away from sensitive resources, as well as provide infrastructure for water resource conservation. For a list of regional parks operated by DPR, refer to Appendix C, *Trails, Parks, and Facilities Operated by DPR in ESGV*.

### Public Joint-Powers Authorities

The Planning Area contains lands owned and managed by joint-powers authorities. Joint-powers authorities are state-created nonprofit organizations that have a critical role in preserving diverse topography, geologic and vegetative features, and important habitat for wildlife. Five joint-powers authorities are actively working in the Planning Area—

Puente Hills Habitat Preservation Authority (PHHPA), San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC), San Gabriel Mountains Regional Conservancy, Watershed Conservation Authority, and Wildlife Corridor Conservation Authority—and are described below.

### PUENTE HILLS HABITAT PRESERVATION AUTHORITY

The PHHPA is a joint powers authority with a board of directors consisting of the City of Whittier, Los Angeles County, Los Angeles County Sanitation Districts, and the Hacienda Heights Improvement Association. The mission of the PHHPA is to acquire, restore, and manage open space in the Puente Hills for preservation in perpetuity, with the primary purpose of protecting biological diversity and additionally providing opportunities for low-impact recreation and outdoor education. To date, the PHHPA manages 3,880 acres of preserved public open space. The land is almost entirely designated as Very High Hazard Severity Zone and the boundaries are almost entirely within the wildland/urban interface, posing great challenges for wildfire risk reduction.

### SAN GABRIEL AND LOWER LOS ANGELES RIVERS AND MOUNTAINS CONSERVANCY

The RMC was created by the state in 1999, and its mission is to preserve open space and habitat for low-impact recreation and educational uses, wildlife habitat restoration and protection, and watershed improvements. RMC's territory covers the eastern portions of Los Angeles and western portions of Orange counties, comprising a vast and varied geography that includes mountains, valleys, rivers, coastal plain, and coastline. RMC is one of nine conservancies within the California Resources Agency.

### SAN GABRIEL MOUNTAINS REGIONAL CONSERVANCY

The San Gabriel Mountains Regional Conservancy is devoted to watershed management and a variety of other projects in the San Gabriel River Watershed in the eastern portion of Los Angeles County. Included in the region are the San Gabriel Mountains, San Gabriel River, and related areas.

### WATERSHED CONSERVATION AUTHORITY

The Watershed Conservation Authority was created in 2003 as a joint-powers entity of the RMC and the Los Angeles County Flood Control

District. The Watershed Conservation Authority focuses on open space, habitat restoration, and watershed improvement projects in the watersheds of both San Gabriel River and the lower Los Angeles River.

### WILDLIFE CORRIDOR CONSERVATION AUTHORITY

The Wildlife Corridor Conservation Authority was established to provide planning, conservation, environmental protection, and maintenance of lands within the Puente-Chino Hills wildlife corridor area. Its goal is to assure the preservation and continuity of habitat to maintain a functioning wildlife corridor made up of about 40,000 acres of land.

## Federal Land

### ANGELES NATIONAL FOREST

The Angeles National Forest encompasses the San Gabriel Mountain range and makes up 1,018 square miles or 25% of Los Angeles County. The San Gabriel Mountains and Angeles National Forest form the northern border of the Planning Area. The lower elevations of the Angeles National Forest, just above the Planning Area, contain water resource infrastructure, dams, and reservoirs. The Planning Area includes extensive areas of wildland/urban interface between the lower elevations of the San Gabriel Mountains and the residential neighborhoods in the northern part of the Planning Area, including unincorporated areas scattered among the cities of Azusa, Glendora, San Dimas, La Verne, and Claremont.

### SAN GABRIEL MOUNTAINS NATIONAL MONUMENT

San Gabriel Mountains National Monument was designated in 2014 and encompasses 346,177 acres of federal land. The majority of the land is in the Angeles National Forest (342,177 acres) with a small area in the San Bernardino National Forest (4,002 acres). The San Gabriel Mountains provide 70% of the open space and 30% of the drinking water in Los Angeles County. The San Gabriel Mountains also provide important habitat for native fish, animals, and plants, in addition to threatened and endangered species.

## Trails

The ESGV has an extensive trail system that runs through regional parks, national forest, lands owned and managed by nonprofit conservation organizations and public joint-powers authorities, and lands restricted by easements and deed restrictions. The varied

geography across the Planning Area provides for different trail experiences. For a further description of trails operated by DPR, refer to Chapter 6, *Parks and Recreation Element*, and Appendix C, *Parks, Facilities, and Trails Operated by DPR in the ESGV*.

## B. BIOLOGICAL RESOURCES

Los Angeles County is part of the California Floristic Province, which has been designated by Conservation International as one of the world's top 36 hotspots of biodiversity loss. The ESGV contains large areas of open space and undeveloped land with identified biological resources. These areas have become threatened due to development, habitat fragmentation, and are further stressed by climate change impacts including wildfires, droughts, increasing temperatures, and extreme climatic events.

### Ecological Context

The ESGV is ecologically defined by the San Gabriel Mountains to the north, the Puente Hills to the south, and the San Gabriel River floodplains that historically dominated the valley. The Angeles National Forest to the north of the Planning Area contains the largest area of dedicated open space in Los Angeles County. A vast number of wildlife species depend on the Angeles National Forest for protection, foraging, and breeding. General habitat types within the forest include riparian habitats, streambeds, wetlands, chaparral, coastal sage scrub, and woodlands. The San Gabriel Mountains exert a tremendous influence over the Planning Area.

The watersheds of the Angeles National Forest allow rainfall and snowmelt to replenish groundwater basins, which provides the Planning Area with approximately 13% of its annual water supply. Surface water runoff fills streams and rivers that support riparian habitats and, in the case of the Angeles National Forest, flow downstream into the channelized waterways of the Los Angeles and San Gabriel Rivers and their tributaries before reaching the Pacific Ocean (CCRC, NPS, 2011, Stein et al. 2010). To protect these forest functions, the U.S. Forest Service has identified two-thirds of the Angeles National Forest in Los Angeles County as sensitive watershed area.

The San Gabriel River receives drainage from a 720-square-mile area of eastern Los Angeles County. Its headwaters are in Angeles National Forest in the San Gabriel Mountains. There exists largely undisturbed

riparian areas and woodlands in the upper reaches of the river watershed. The Upper San Gabriel watershed is one of the wettest locations in Southern California, where rainfall reaches 37.8 inches on average, almost three times the average for greater Los Angeles (CCRC, NPS, 2011; Stein et al. 2010).

The foothills of the San Gabriel Mountains have high sediment yields due to the steep topography, rainfall, and erosion-prone granite geology. This results in a large amount of sediment and debris discharged following major rain events. With climate change and a predicted increase in storm events, sediment and debris discharges could increase significantly (CCRC, NPS, 2011; Stein et al. 2010).

## Types of Biological Resources

The main types of biological resources located in the ESGV—including habitat linkages, wildlife corridors, riparian habitats, streambeds, wetlands, woodlands, chaparral, and coastal sage scrub—and are described below.

### REGIONAL HABITAT LINKAGES AND WILDLIFE CORRIDORS

**Habitat linkages** are important resources that provide species access to vital resources and ensure a high level of regional biodiversity, species movement, and habitat connectivity. Depending on the species, habitat linkages can vary in size. **Wildlife corridors** enable movement of larger, mobile species (e.g., foxes, bobcats, coyote) between major open space regions. Similar to habitat linkages, wildlife corridors also usually possess cover, food, and water. The upland margins of a creek channel, open ridgelines, open valleys or the bottoms of drainages often serve as major corridors locally, as do riparian alignments.

Wildlife corridors and habitat linkages exist within SEAs in the ESGV. The Puente Hills serve as an important regional habitat linkage connecting to the Chino Hills State Park. The Puente and Chino Hills are a natural, physical link between the Santa Ana Mountains and the San Gabriel River. The Puente and Chino Hills function as both an important wildlife linkage and resident habitat area for regional wildlife populations. The East San Gabriel Valley SEA represents the only regional wildlife linkage between the San Gabriel Mountains and the Puente Hills and Chino Hills. It contains “islands” of habitat that are commonly used by birds and insects for movement between larger areas of habitat.

*Habitat linkages* are areas within the overall range of a species or suite of species that possess sufficient cover, food, forage, water, and other essential elements to serve as a movement pathway, or between two or more larger areas of habitat.

#### Habitat linkages

*Wildlife corridors* are areas of open space of sufficient width—generally several hundred feet wide and unobstructed—to permit larger, mobile species to pass between larger areas of open space, or to disperse from one major open space region to another.

#### Wildlife corridors

## RIPARIAN HABITATS, STREAMBEDS, AND WETLANDS

Riparian habitats and streambeds are of inherent value to local and regional ecosystems. They serve as important connectors to upstream and downstream ecosystems or adjacent habitats; provide critical value to migratory birds; contribute to the quality of habitat linkages and wildlife corridors; and play a crucial role in maintaining surface and subsurface water quality. With the loss of wetland and riparian habitats comes the loss of their pivotal ecological functions. Wetlands provide ecological services and contribute to water quality and the overall health of watersheds, slow water flow, decrease erosion, filter water runoff, and provide habitat for many endangered plant and animal species.

The ESGV features riparian habitats, wetlands, and streambeds. Walnut Creek flows through Walnut Creek County Park and is part of the East San Gabriel Valley SEA, one of the few remaining natural riparian areas in the region as many creeks have been lined with concrete and rerouted. Walnut Creek and the lower slopes of the San Jose Hills contain one of the best riparian oak woodlands in the county. Puddingstone Reservoir, part of the East San Gabriel Valley SEA, also hosts a great variety and number of migrating waterfowl and other birds during the spring and fall, and provides riparian habitat for other animals.

## WOODLANDS

The ESGV's woodlands are an important resource that provide an abundance of aesthetic, ecological, and economic benefits to residents. Various types of woodlands are found in the designated SEAs within the ESGV, including riparian woodlands, California walnut woodlands, and oak woodlands. Oak woodland habitats are the most diverse terrestrial ecosystems in California. Similarly, riparian woodlands and California walnut woodlands provide habitat for multiple species within a concentrated area. Walnut woodlands are one of the rarest and some of the most endangered plant communities in Southern California. In the East San Gabriel Valley SEA, there are fine stands of walnut woodland in the upper elevations, as well as northern ravines of oak woodland, and the remnants of the coast live oak woodland that once bordered the Big Dalton Wash. In addition, the Walnut Creek drainage features oak riparian woodland and isolated stands of willow woodland.

## CHAPARRAL

Chaparral consists of broad-leaved or needle-leaved, sclerophyllous (hard-leaved), medium height to tall shrubs that form a dense cover. Chaparral is found in areas with steep topography and shallow stony soils, usually below 5,000 feet. It is a common shrub community composed of robust, mostly evergreen species. Mixed chaparral and cactus scrub can be found in the Puente Hills SEA on the Turnbull Canyon and Sycamore Canyon slopes, which support a local population of the sensitive coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*). Much of this area that includes chaparral and coastal sage scrub in the Puente Hills SEA and surrounding areas are critical habitat for the coastal California gnatcatcher.

## COASTAL SAGE SCRUB

Coastal sage scrub is characterized by low-growing aromatic and drought-deciduous shrubs. The community is sometimes called “soft chaparral” due to the predominance of soft, drought-deciduous leaves in contrast to the hard leaves of plants in chaparral communities; coastal sage scrub is also shorter in stature than chaparral. As little as 10% to 15% of California’s original coastal sage scrub has survived from its historic levels, with most lost to development. One recent study called coastal sage scrub the single most endangered habitat type in the United States. The Coastal California Gnatcatcher, which is listed as Threatened under the Endangered Species Act, is found in this plant community with populations existing within SEAs and surrounding areas.

## C. WATER RESOURCES

The San Gabriel Valley was once a wealth of wetlands and riparian habitat. The valley once had high ground water, seeps, streams, wet meadows, and marshes, with waters that eventually flowed into the shifting course of the San Gabriel River. The water-influenced landscape changed drastically with the extractive economy brought by the westward migrants who settled the San Gabriel Valley in the 19th and 20th centuries. Water extracted to meet the booming population lowered the water table and limited the ability of the river and floodplains to support riparian and wetland habitat. In addition, development of the floodplain—including channelization of the rivers and creeks—resulted in extreme alteration of hydrology patterns,



eliminating the formerly plentiful wetlands' ecological benefits to water quality in the valley. The San Gabriel Valley floor has lost approximately 86% of its historical wetlands (CCRC, NPS, 2011, Stein et al. 2010).

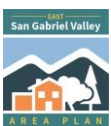
## San Gabriel River Watershed

The main watershed for the San Gabriel Valley is the San Gabriel River Watershed, which totals more than 640 square miles and encompasses part of the Angeles National Forest, the San Gabriel Valley, and large urban areas in the southeast portion of Los Angeles County. The main watercourse in this watershed is the San Gabriel River, which extends 59 stream miles from the Angeles National Forest to the Pacific Ocean. The river drains 350 square miles of land and recharges groundwater tables in several basins. The major tributaries that feed the San Gabriel River include Coyote Creek, Walnut Creek, Puente Creek, and San Jose Creek. Surface water flows from the San Gabriel Mountains, San Jose Hills, and Puente Hills into the Walnut and San Jose Creek, both of which are tributaries of the San Gabriel River. The creeks flow east–west and connect with the south-flowing San Gabriel River.

A clear link exists between the health of this watershed and the quality of life for millions of Los Angeles County residents. The upper reaches of the San Gabriel River support wildlife, deliver drinking water, and provide a myriad of recreational opportunities, but water quality can also suffer from the negative impacts of recreation. The channels for Puente and San Jose Creeks travel through the most developed areas of the ESGV and the most park-poor areas, with many industrial and commercial land uses along their course. In these areas, if there is enough right-of-way or channel adjacent space, developing multi-benefit water quality improvement projects with active transportation trails and greenery would benefit park-poor communities and reduce the high levels of contamination.

## Groundwater

When precipitation and surface water infiltrate naturally into the ground, they first typically travel through an unsaturated soil zone until they reach the water table, which is the layer where the soil is saturated. This layer of soil saturation is called a groundwater basin or aquifer. Aquifers can hold millions of acre-feet of water and extend for miles. Groundwater extraction accounts for nearly one-third of the



water usage in the unincorporated areas. Development at the fringe of suburban communities and rural areas rely on private well water and septic tanks for waste removal. Failures of on-site wastewater treatment systems can impair water quality and adversely affect human health and biological communities in the surrounding watershed.

## Water Infrastructure

At the base of the San Gabriel Mountains, four dams to control and capture downhill water flow, sediment basins, and large spreading grounds aid in groundwater recharge and sediment capture (CCRC, NPS, 2011, Stein et al. 2010). This infrastructure is primarily operated by the Los Angeles County Flood Control District and serves the dual functions of flood protection and water storage. These downstream facilities capture close to 80% of the runoff that flows from the mountains. Stored runoff collected during the storm season is later released at controlled rates throughout the year for downstream groundwater recharge. Water sources that originate in Los Angeles County provide approximately one-third of the ESGV's water supply.

## Water Quality Impacts

Urban runoff and waste discharged from treatment plants carry contaminants to the ocean and pollute the groundwater.<sup>1</sup> The waterways of the ESGV exceed **total maximum daily load** and are among the Clean Water Act Section 303(d) listings. Major contaminant sources in ESGV waterways include industrial and domestic chemicals, automotive byproducts, and chemicals and nutrients from turf landscape and agricultural management. The source contaminants are metals, pesticides, nitrates, trash, salinity, pH, and bacteria. Treatments are needed to address water pollution issues to reduce pollutant concentrations, increased vegetation and ground permeability, and restoration of riparian ecosystems where possible to regain lost ecosystem services (USEPA, check TDL numbers from Heal the Bay, CCRC).

Groundwater contamination is a significant concern in the Planning Area. Three major superfund sites are found in the vicinity of the ESGV, and soil contamination has been confirmed at nearly 400 sites. Water treatment facilities are located in Baldwin Park, along San Jose Creek, and in Whittier Narrows, with contaminants greatly exceeding allowable levels. Groundwater is a significant source of drinking water

*Total maximum daily load* is the calculation of the maximum amount of a pollutant allowed in a waterbody, and serves as the starting point for restoring water quality.

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in the ESGV and must be processed to remove the contaminants found.

## D. SCENIC RESOURCES

A *scenic viewshed* is a scenic vista from a specific location along a highway, trail, waterway, or in a park or neighborhood.

### Scenic Viewsheds

Scenic resources consist of designated scenic highways and corridors (or routes), hillsides, scenic viewsheds, scenic vistas, and ridgelines, among other scenic resources. **Scenic viewsheds** can include elements such as ridgelines, unique landscape features, and scenic landforms, among other scenic elements. The County recognizes mountain vistas and other scenic features as significant resources, and has adopted policies and ordinances to address preservation of valuable designated scenic areas, vistas, and roadways. The General Plan provides protection and preservation policies that allow individual communities to identify and regulate ridgeline protections.

The Planning Area contains scenic views of the San Gabriel Mountains, Puente Hills, and San Jose Hills. Scenic resources in the Planning Area also include significant ridgelines, scenic hillsides, riparian corridors, scenic routes and corridors, scenic viewsheds and vistas, and scenic routes along rivers and waterways, among other scenic features in the landscape. Unfortunately, some of the region’s scenic features have already been lost, degraded, and/or encroached upon by development. For this reason, it is important to identify, protect, and preserve the existing scenic resources in the ESGV to be enjoyed by future generations.

Undeveloped mountains and hillsides not only contribute to the scenic beauty of the region, but also contain areas of biological significance and protect the overall health of watersheds. The region’s mountains and hills contribute to physically defining the ESGV communities, while the waterways and riparian corridors connect residents to unique scenic experiences. These scenic resources provide extensive environmental and public health benefits, in addition to protecting the health of the watershed.

## Scenic Resource Regulation

### SCENIC HIGHWAYS

According to state guidelines, a highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler’s enjoyment of the view.

Adoption of a corridor protection program is required, for preservation and implementation of the vision developed for a designated scenic highway. Presently, no designated scenic highways exist in the Planning Area.

The Rowland Heights Community Plan, adopted in 1981, suggested consideration of State Route 57, sections of Fullerton Road, and Brea Canyon Cutoff as scenic highways. The plan identifies State Route 57 as a priority for designation as a scenic highway. The nearest designated scenic highway to the Planning Area is the Angeles Crest Highway from 2.7 miles north of Interstate 210 to the San Bernardino County line. While this is outside the Planning Area, the designation does impact scenic beauty of the mountains that provide a dramatic backdrop to the communities in the Planning Area.

## SCENIC HILLSIDES

The San Gabriel Mountains and San Jose and Puente Hills play a major role in physically defining the diverse communities in the unincorporated ESGV. They not only create dramatic backdrops against densely developed suburbs and communities, but also provide extensive environmental and public benefits. In our outreach sessions with members of the public and meetings with stakeholder groups, the view of and from the mountains and hillsides that surround the valley is one of the most treasured aspects of living in and visiting the ESGV. The hills and mountains provide scenic, recreational, and health benefits to members of the public in addition to the extensive environmental benefits they offer.

The majority of the existing native plant communities and animal species within the Planning Area reside within the hilly, mountainous terrain and canyons. In addition to their scenic beauty and biological diversity, undeveloped mountains and hills serve to protect the overall health of watersheds. They provide natural drainage systems, which play a role in water quality, slope stability, stormwater runoff, erosion control, and groundwater replenishment.

The County adopted the Hillside Management Ordinance to limit the scenic impact of hillside development. The region has development in the foothills of the San Gabriel Mountains and in the Puente and San Jose Hills. However, hillside development impacts more than scenic resources. Development of steep terrain can be costly to public agencies in providing public services and safety. Hillside areas in this region are also largely designated as fire hazard areas. Additionally,

hillside development alters natural drainage systems and removes native vegetation resulting in increased erosion. Naturally vegetated hillsides provide significant ecosystem services, slowing water runoff and increasing percolation and containment, thereby improving overall water quality.

### SIGNIFICANT RIDGELINES

The General Plan supports the protection and preservation of ridgelines and allows individual communities to identify and regulate their ridgeline resources. The Hacienda Heights Community Plan, adopted in 2011, identified specific ridgelines for protection and preservation. However, no codified ordinance has been adopted for Hacienda Heights to implement the ridgeline regulations for by-right development. The Rowland Heights Community Plan, adopted in 1981, contains policies for the preservation of ridgelines; however, specific ridgelines for preservation were not identified with plan adoption. The scenic quality of the hillsides and ridgelines in the ESGV is a highly valued asset by both residents and visitors to the Planning Area and its environs.

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