



### 3.8.5 El Dorado Regional Park

#### Project Description

El Dorado Regional Park, owned by the City of Long Beach, is 500 acres of open space in a densely developed urban area. It is a long stretch of open land running along a concrete-lined section of the river. The park is a well-established urban recreation area, bordered by the river, Coyote Creek, and the 605 Freeway. The City and the RMC have partnered to develop a new Master Plan for the park, which will include new treatment wetlands, replacing exotic plants with natives, and creating new riparian habitats. An alternative vision includes returning this reach of the river to a more natural state with a soft bottom.

In a parallel process, the County of Orange is working with the U.S. Army Corps of Engineers on the Coyote and Carbon Creeks Watershed Management Plan, which includes the El Dorado Regional Park. That study will help determine the feasibility of elements of this project.

#### Opportunity

The park is at the confluence of the San Gabriel River and Coyote Creek, on land that was originally part of the floodplain. When the river and creek were channelized, the rich alluvial soils were perfect for farming. In the early 1950s, the City of Long Beach had the foresight to buy 500 acres of that farmland for a regional park to preserve open space. The farmland is long gone. The park is now surrounded by dense urban environments, the freeway—and two miles of the river. However, there is little connection between the park and the river: berms block views of the river from the park and SCE power lines run all along the river, precluding access except at two points.

The park is divided into four sections. The southernmost section, called South of Willow, is six City-owned acres of mostly undeveloped open space. Between that land and the river is 12 acres of SCE right-of-way. The area has been heavily disturbed through extensive construction and maintenance activities associated with the Wastewater Reclamation Plant (WRP) and the new Water Replenishment District groundwater injection facility—injecting water into the coastal basin to prevent saltwater intrusion. There is very little native habitat and minimal wildlife.

Area 1, just north of that site, includes the well-used El Dorado Nature Center, visited by more than 130,000 people a year. It offers natural trails and two lakes joined by a stream that meanders through forested areas and fields of wildflowers. To birds, the Center is a huge green oasis with

water, cover and food—it is home to over 50 bird species. There is also a wide variety of mammals, including coyotes, foxes, squirrels, and raccoons. However, the area was initially planted with many non-native species that grow quickly, including pine, eucalyptus and oak. Many of these forested areas have now reached maturity and are beginning to die off. Grounds at the Center are overgrown with non-native grasses, and need replanting. The Nature Center itself has become shopworn and needs updating.

Areas II and III in the northern half of the site, offer a manicured park setting with common turf and ornamental, non-native trees planted for shade. These areas have paved trails and four more lakes, some concrete lined, stocked with fish. Wildlife diversity has dramatically decreased:

mainly gophers and field mice remain, along with ducks, herons, and egrets on the lakes. During dry months, all the lakes are replenished with a combination of potable water and well water from the Long Beach Water Department.

This two-mile stretch of open space along the river presents several tantalizing, unique opportunities:

- With potable water an increasingly scarce resource, the City is interested in creating a more sustainable lake and creek system. A new treatment wetland at the northern end of the Park could fully treat a year's worth of stormwater runoff from a portion of the surrounding urban areas, replenishing the lakes and perhaps providing Long Beach TMDL credit

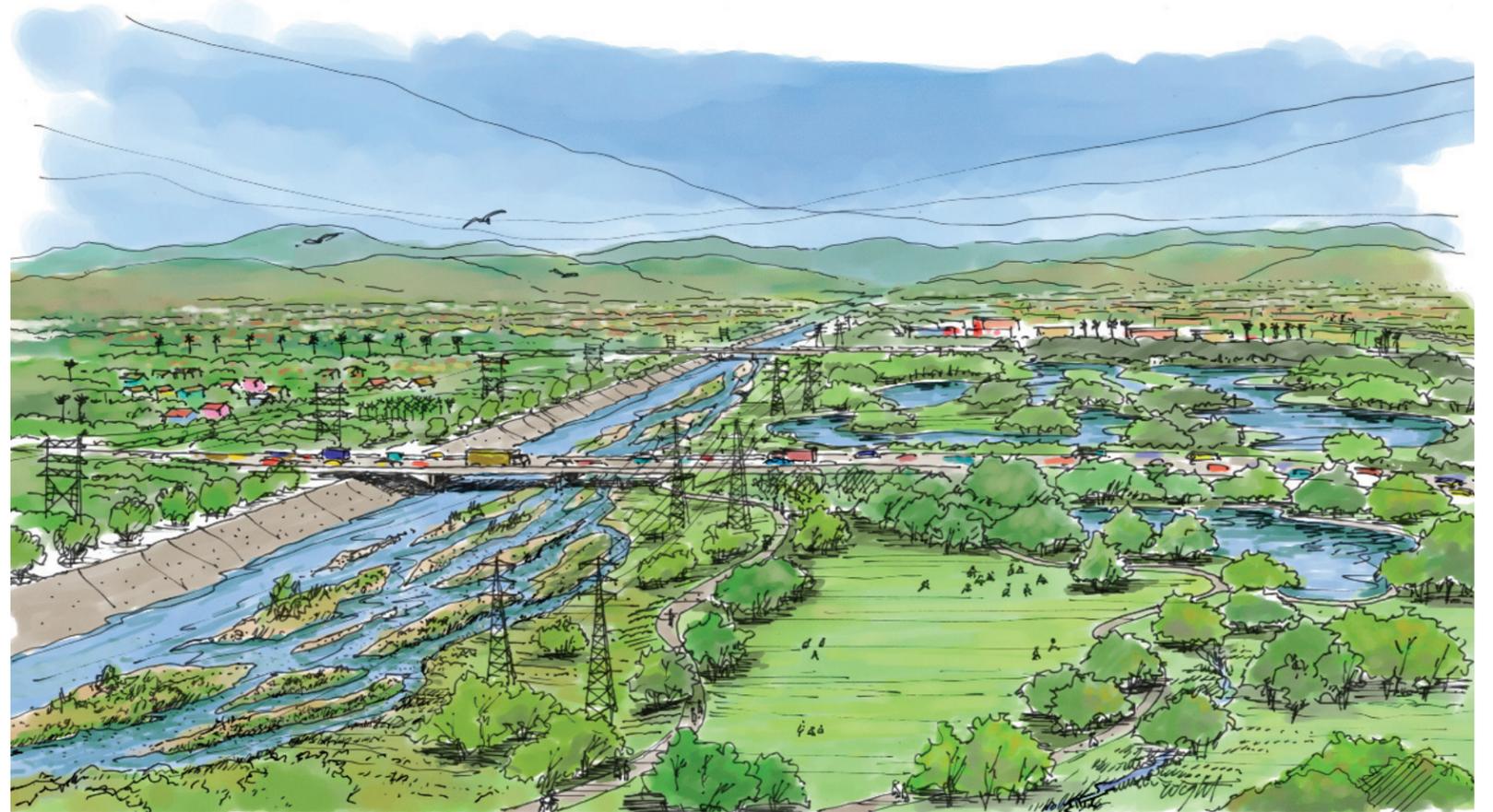


Figure 3-73. A partially restored floodplain brings an active riparian ecosystem to El Dorado Regional Park.

and increasing the amount of potable water for Long Beach residents. The wetland could also cleanse reclaimed water from the treatment plant at the south of the park, making it acceptable for replenishing the lakes. (Landscaped areas are already irrigated with reclaimed water.)

- Working with SCE to create habitat and allow river access in more places would set a precedent for more partnerships along the entire river.
- Vegetating with native plant species would increase food and cover, allowing wildlife to return to the area.
- A constructed wetland adjacent to the river at the south could further treat water in this reach of the river, which is mainly effluent from the Los Coyotes and Long Beach Water Reclamation Plants. That water currently flows to the ocean and could be recaptured through a new wetland.
- And, in a visionary alternative scenario, replacing the concrete bottom and east bank of this reach of the river with a soft bottom and terraced vegetated bank would widen the river, create valuable new riparian habitat, integrate the river with the park, and increase both recreational and educational opportunities.



Figure 3-74. The upper lake would be filled with runoff and reclaimed water as the first step in water treatment.



Figure 3-75. This underused northwest corner of the park could be the site of a treatment wetlands or floodplain restoration.

### Challenges

Many other areas along the San Gabriel River are reclaiming unattractive landscapes and restoring native vegetation, which will vastly improve both aesthetics and habitat. El Dorado is already “green,” although it is manicured and artificially created in Areas 2 and 3. This project proposes replacing the exotic and ornamental plants with native vegetation that will not require as much water and is better for habitat. However, it won’t be as “green” all year long. Some people may prefer the manicured areas and may not like the change. Designs should include some of the most aesthetically pleasing native vegetation and ensure minimal loss of active recreation space. It will also require some awareness raising to promote the benefits of native vegetation. The completed El Dorado Nature Center Master Plan study may have also addressed this issue.

In the LA metropolitan area, it is also unprecedented to remove concrete channels from a river. These channels were built in the 1960s and 1970s, continuing four decades of flood control efforts. The community did not want any more damaging floods and the channel represents a major psychological and monetary investment. The open area here offers excess capacity to restore the natural floodplain for the river and it is feasible to remove the channel and maintain flood protection. But, it will take a major effort to convince all stakeholders that it is a wise and prudent idea. (Only

the east side of the channel would be removed; the west will remain to provide flood protection for residential areas.)

A decision about whether to remove the concrete must be made before designing treatment wetlands in the southern area of the park, to take into account the larger floodplain that would be required. According to the 2003 State Water Resources Control Board, Section 303(d) list of Water Quality Limited Segment, the reach of the San Gabriel River adjacent to the park is considered impaired for algae, with abnormal fish histology and high coliform counts. That water would benefit from new treatment wetlands in the southern part of the park.

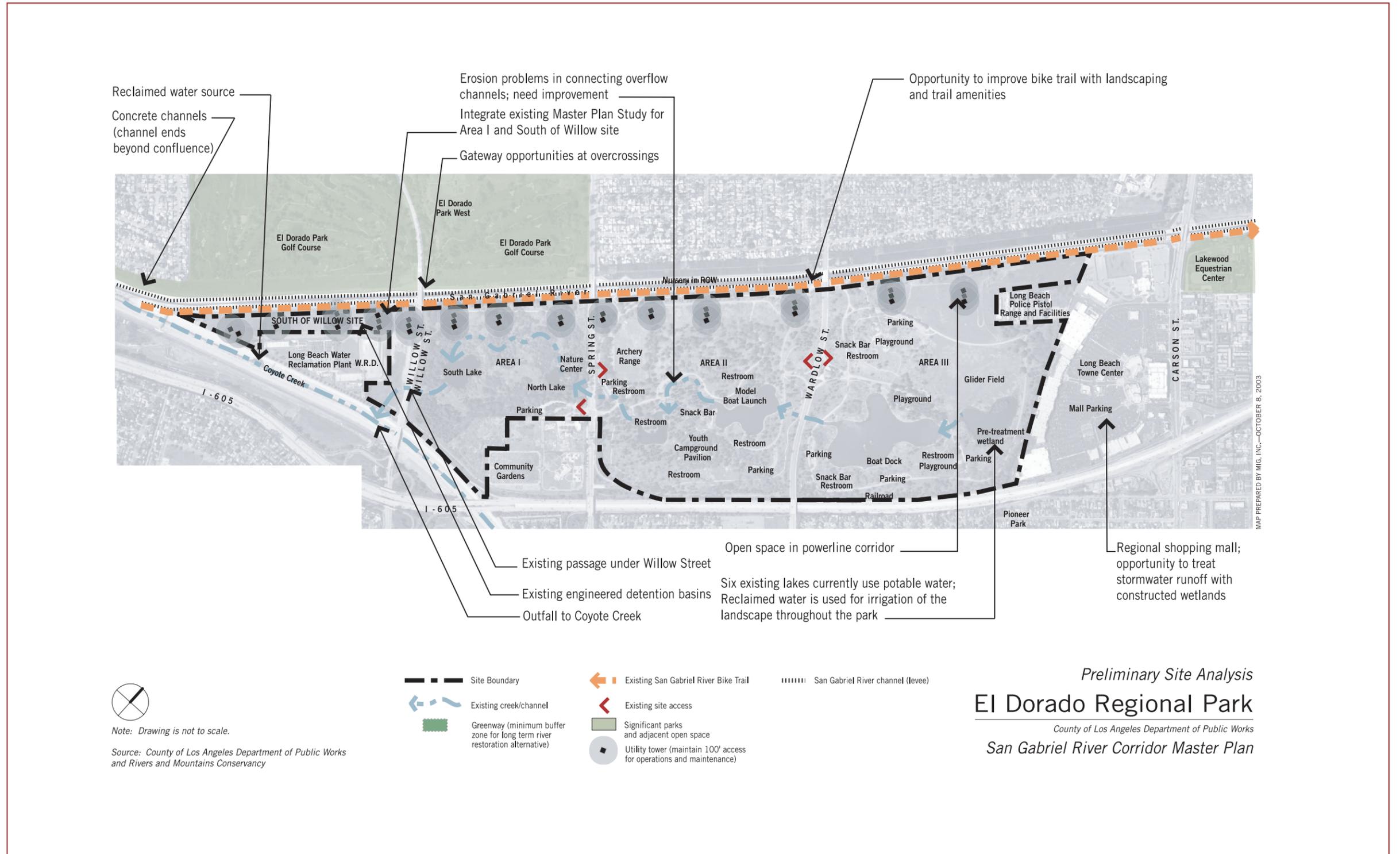
In addition, SCE power lines that run along the river would need to be moved further into the park area, away from the floodplain. In some areas of the country, power lines are placed in wetlands. However, it might be more feasible to relocate them in the park.

According to City of Long Beach park officials, using reclaimed water coming directly from the treatment plant for lakes that are stocked with fish is not acceptable to members of the public who may later catch and consume those fish. Also, reclaimed water is high in nutrients like nitrates and phosphates that might cause algae blooms in a lake. It is too costly for the Long Beach WRP to remove those nutrients, so treatment would be an ideal solution. However, that water would first need to be pumped up to the new north treatment wetlands.

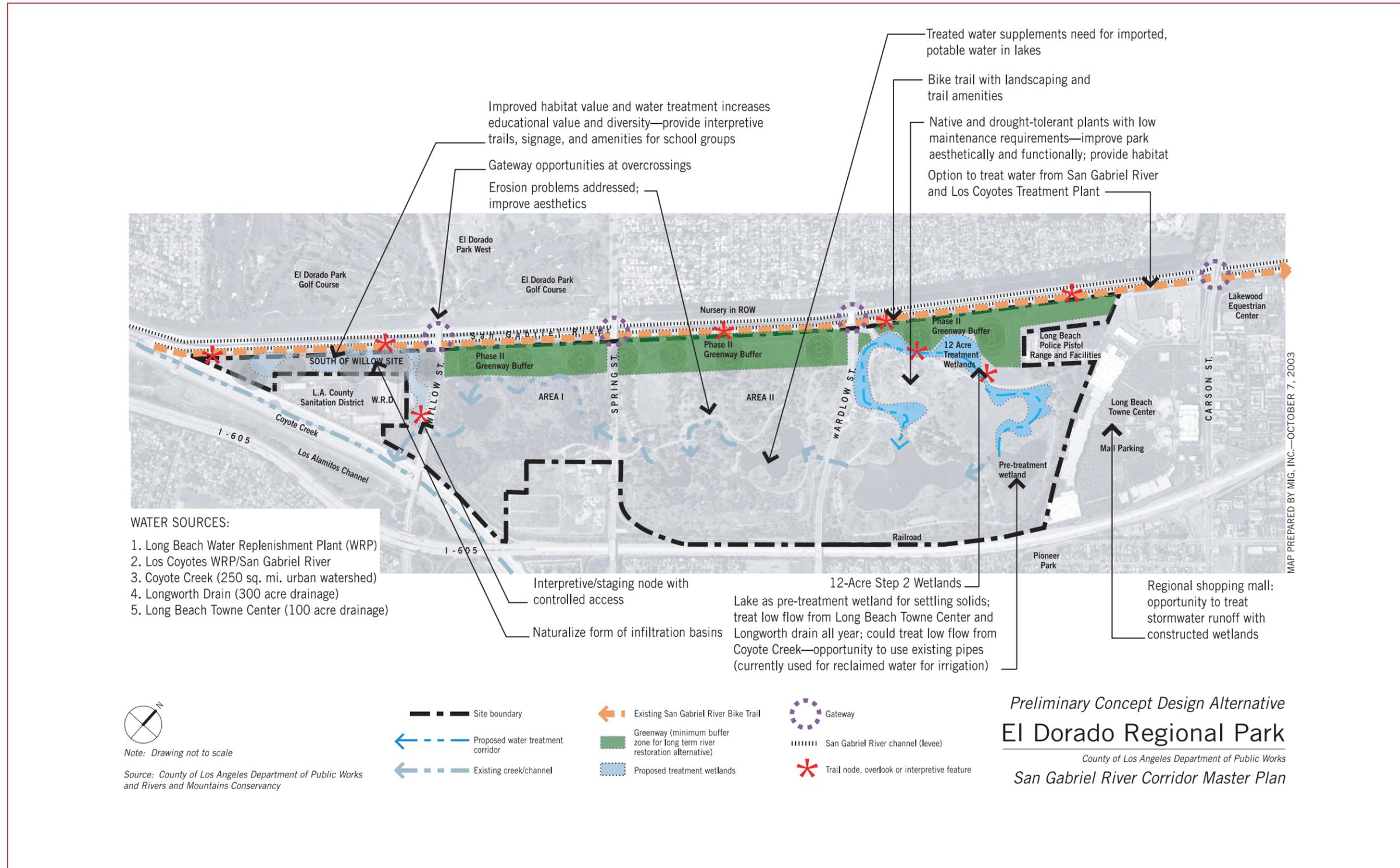
### Design Concepts

**WETLANDS.** The wetland would cover about 6 acres, situated about 10 feet below the existing grade. Stormwater runoff from the adjacent residential and commercial areas in Lakewood and the Long Beach Towne Center, would flow into the northernmost lake. That lake will act like a settling pond. Sediments like oily sands would settle at the bottom and be removed. Water then flows into a snaky maze of vegetation within a newly created wetland, which very effectively cleanses the water. From there, the cleansed water flows into the second lake.

Reclaimed water pumped up into the wetland area would be cleansed of nutrients by the wetlands before flowing into the second lake. During the dry season, reclaimed water from the Long Beach WRP would supplement the urban runoff throughout the treatment wetland system to ensure continuous water flows and help the cleansing process. Water would flow continuously through the lakes, and back out into the river.



Map 3-18. Site Analysis—El Dorado Regional Park.



Map 3-19. Preliminary Concept Design Alternative—El Dorado Regional Park. For illustration purposes only.

A second wetland, at the south end of the park, would treat stormwater runoff and the discharge from the Los Coyotes WRP, returning cleansed water to the river. The habitat areas can be designed to meet the access requirements of SCE and promote multiple uses on the utility corridor rights of way. A decision about removing the concrete channel would need to be made before designing this wetland. The planning and design of both wetlands would be in coordination with the local mosquito and vector control agency to reduce mosquito breeding and not create any public health risk. Long-term maintenance and monitoring will also be developed as part of the final design.

**RESTORED FLOODPLAIN.** An alternative vision is replacing the concrete bottom with a soft bottom and a series of terraces for flood protection. That is a long-term goal requiring extensive reengineering of the river corridor. The river here is about 100 feet wide and flows are consistently between 100 and 150 cfs. The channel capacity now is almost 59,000 cfs, greater than the 100-year flood.

A soft bottom would require increasing the width of the river with its terraces to 300 feet to provide the same flood control capacity—in most places that would require less than 10 percent of the parklands. The western bank of the San Gabriel River channel and the eastern bank of the Coyote Creek channel would remain, while the two internal channels would be removed. This would create about 8.5 acres of riparian habitat, with willow and cottonwood trees, baccharis and mule fat scrub. It would provide habitat for the least Bell’s vireo, yellow warbler and yellow-breasted chat, as well as foraging mudflats and shallow water for native sandpipers, egrets and herons. It would be an important link for migrating coastal birds.

An engineering study will be needed. This may be integrated into the U.S. Army Corps of Engineers study. In addition, operators of the water treatment plant will require assurance that there would be no negative impact on treatment.

**TRAILS.** Trail access, signage, artwork and shade trees will improve the trail experience and emphasize connections to the river. Overlook points and vistas can highlight the water conservation and water quality aspects of the wetlands and lakes. The current San Gabriel River Bike Trail runs along the park, and could be linked through the wetlands area. If the river becomes soft-bottomed, the terraces could provide soft equestrian trails as well as decomposed granite and asphalt multi-use trails.

**LANDSCAPING.** Potential habitat changes include replacing existing ornamentals with native drought-tolerant plants and re-vegetating land on the eastern bank with native trees and an understory of gooseberry and mule fat, which attract flying birds and provide foraging habitat for shoreline birds. The eucalyptus in the Nature Center area would be removed and replaced with native trees. The ruderal vegetation adjacent to the water treatment plant can be replaced with a mosaic of willow trees and native scrub, including sage scrub that supports declining wildlife species such as the cactus wren and California gnatcatcher.

#### Key Components of the Concept Design Study

- Connected system of wetlands and stream corridors, treating stormwater and reclaimed water
- Potable lake water replaced with treated water
- New habitat areas, replacing exotic plants with native plants
- The river integrated with the park
- Improved, linked trail system with interpretive signage
- Multi-use on the utility right of way
- Potentially removing concrete channels on east side, restoring the floodplain—feasibility study required

#### 3.8.6 Lessons Learned

The purpose of the concept design studies was to apply the principal theme of this Master Plan: the multi-objective approach to river corridor project planning, designed to respond to the needs and interests of multiple users. Each study was conceived as an experiment designed to explore the planning process of simultaneously addressing the goals of habitat, recreation and open space, along with the pre-existing priorities of flood protection, water quality and water supply. In this way, the studies helped measure the benefits and limitations of this multi-objective/multi-user approach. The lessons learned from the concept design studies will be useful to other project sponsors as they navigate the challenges created by integrating seemingly divergent program elements.

A key finding is that the multi-objective approach can only be successfully applied on a case-by-case basis. There is no “cookie-cutter” design or formula for success. A successful combination of divergent program elements is dependent on both the physical setting to which it is applied and the talent of the planning team whose site designs are created in

response to that setting. In addition, the multi-objective planning process must also take into account institutional, regulatory, and political factors that may limit the available options. As a result, what may work in one setting may have to be significantly modified to be successful elsewhere, and the multi-objective approach may not work in all settings. However, a planning team should approach all future project opportunities from the assumption that a multi-objective approach is applicable unless the emerging design process should prove otherwise. This approach represents a significant shift from past planning practices that began each project with the assumption that it was a single-purpose endeavor, as multi-objective projects were then seen as the exception rather than the rule.

#### San Gabriel Canyon Spreading Grounds (R3.8)

This site was an opportunity to integrate open space, recreation, and habitat objectives into a major single-function infrastructure. But it came with significant challenges. The ambitious visions initially conceived for the site had to be more tailored to match physical and operational realities. These included safety and liability concerns created by the unusual depth of the spreading basins, the steepness of the banks surrounding the basins, and 80-foot water fluctuations during the course of the year. There were also concerns that some habitat designs might attract wildlife, which could have negative effects on water quality. The concept design addressed these and other concerns by focusing on the edges of the site, making it an attractive place to visit but not in which to linger, and by keeping visitors away from the operational heart of the spreading grounds. Some of the other lessons to keep in mind include:

- Single-function infrastructures, whether designed for flood control, water conservation or other purposes, may contain other, hidden open space opportunities.
- Often, single-purpose land areas are sterile, barren landscapes. It is possible to redesign these areas to provide other benefits such as open space and habitat for people and wildlife, in a way that is compatible with the primary function of the site.
- It is important to look at other, similar situations with new eyes. Look beyond the current reality to see the hidden possibilities for adding life and vitality, making more efficient and beneficial use of all available open space possibilities along the river.

- Project designs must be carefully considered to make sure that the pursuit of additional goals beyond the primary function of the site does not inadvertently create additional liabilities, especially regulatory ones.

#### **Woodland Duck Farm (R4.15)**

This significant land reclamation opportunity will provide nearby residents with access to badly needed open space, recreation and restored habitat areas. However, the site design must take into account both physical and regulatory constraints. For instance, treatment wetlands can enhance aesthetics of the site and improve water quality. However, wetlands or other water features cannot for safety and regulatory reasons be located under the SCE power lines that dominate much of the site. This does not mean treatment wetlands are infeasible at this site, but simply that in the site design they must be carefully situated and engineered so as to not violate this spatial requirement. The lessons here are:

- It is important to take advantage of all available open space opportunities along the river; regardless of its current condition, past history, or strange configuration.
- Land reclamation and land re-cycling is an important tool for the enhancement of the river environment, especially as current industrial land uses reach the end of their useful life cycle.
- There is a patchwork of open space opportunities along the river that slowly, over time, can knit together into a re-greening of the river for recreation, habitat and other purposes.

#### **San Gabriel River Discovery Center at Whittier Narrows (R4.26)**

Being centrally located, this project will provide an ideal setting, for a regional river and watershed education center, complete with demonstration treatment wetlands. But like other projects along the San Gabriel River corridor that seek access to water, the site design must recognize existing water rights and the limitations they impose on water use, and so cannot diminish the amount of water available to water supplies and other water rights holders. Each project has to assess water availability and the constraints associated with its use. Where will it come from? How much is required? How can it be done without impacting the water supply? The use

of unclaimed reclaimed water that is not adjudicated was one of various options raised in the design process. Other lessons:

- No water can be spread without the prior written authorization of the Watermaster.
- The potential impacts on the water supply from unintended groundwater contamination have to be understood and addressed in the site design.
- The enhancement of the river corridor requires a partnership among a wide range of stakeholders, and this project is a vivid example of what can be accomplished when such a cooperative arrangement and shared vision is in place.
- Buildings can be fully integrated into the natural systems of a site.

#### **Lario Creek (R4.28)**

Bringing a wide range of interests (i.e., potential multiple users) together in the planning process can lead to new design solutions that deal more effectively with potential constraints than the original design conceived by any single user group alone. In this instance, an alternative approach emerged from the group dialogue that would balance potentially conflicting water flow needs with vegetation growth needed for restored habitat. A new channel parallel to the primary conveyance channel would meet the goals of both the water supply interests and those wishing to restore natural habitat. Other lessons:

- Upgrading flood/water conservation infrastructure presents opportunities to incorporate additional benefits; in this case new habitat and open space.
- If one goal is potential restoration of the natural systems of Southern California, water usage at projects like Lario Creek should not be year-round. Otherwise, non-native species are going to be attracted to the area at the expense of native species that have adapted to a dry climate.
- No matter how well designed, projects containing wetlands will breed mosquitoes. For this reason, all planning and design for any new or restored wetland area for habitat or stormwater treatment must be done in coordination with the local mosquito and vector control agency to avoid creating any public health risk.
- An ongoing, sustainable, well-funded vegetation maintenance and management program must be built into all such projects.

#### **El Dorado Regional Park (R6.21 and R6.22)**

This rare, 497-acre open space opportunity of parkland adjacent to the river presents a very large and tempting canvas with which to work. How can one make the best use of this opportunity while recognizing that the site design must address significant constraints? The planning process led to a short-term plan to create urban runoff wetlands treatment systems and a long-term plan to partially restore the floodplain by removing one side of the concrete channel.

Both visions require hydrology studies to assess their feasibility. Because long-term plans will affect the treatment wetlands design and configuration, a decision about whether to restore the floodplain must be made before planning can begin on the wetlands.

Other observations include:

- The river should be front and center as it passes through all the cities along its path to the sea; it cannot remain a forgotten, hidden flood channel. Existing parks and open spaces can be re-oriented to face the river.
- Many parks along the river have the traditional ornamental landscape design. This project could be the prototype for a new river park design model based on native vegetation and river orientation.
- “Thinking big” (e.g., taking out the concrete) may open up other possibilities that no one would have thought of, even if the initial concept is not implemented in its pure form.

