



COURTESY OF NORTH EAST TREES



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Figure 3-55. The Reach 4 design palette features wood construction, tree forms and birds.

- *Mimulus aurantiacus* (bush monkeyflower)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Quercus agrifolia* (coast live oak)
- *Quercus chrysolepis* (canyon live oak)
- *Rhus integrifolia* (lemonade berry)
- *Rosa californica* (California rose)
- *Rubus ursinus* (California blackberry)
- *Sambucus mexicana* (Mexican elderberry)

- *Salix exigua* (narrow-leaved willow)
- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix lauegata* (red willow)
- *Umbellularia californica* (California bay laurel)

Reach 4: Lower San Gabriel Valley

A close relationship to the land guides the design in the lower San Gabriel Valley. Gravel mining, the recent agricultural land uses such as the Duck Farm, and natural open spaces of Whittier Narrows Regional Park all speak

to the importance of natural resources in this reach. Previously, this reach was crisscrossed by small streams and wetlands. There were willows, alders, cattails and other wetland and riparian plants. Then it was home to cattle ranchos and small farms. Over 300 species of birds can still be found today at Whittier Narrows; they frequent the soft-bottom habitat areas of the San Gabriel River and San Jose Creek.

Materials

- Wood (nature-center inspired wood fences, pilings, signs)
- Stones, river rock, flagstone
- Trees (sycamore, willow, alder)
- Wetland stream plants (cattail)

Forms

- Wetland birds (heron, egret, ducks)
- Bird-like oil-derricks

Colors

- Brown
- Green

Native Plants

- *Amorpha fruticosa* (false indigo)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Heteromeles arbutifolia* (toyon)
- *Juglans californica* (California walnut)
- *Malosma laurina* (laurel sumac)

- *Mimulus aurantiacus* (bush monkeyflower)
- *Platanus racemosa* (western sycamore)
- *Populus fremontii* (Fremont's cottonwood)
- *Quercus agrifolia* (coast live oak)
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Reach 5: Upper Coastal Plain

The Pio Pico State Historic Park provides many distinct historic and cultural design references. The historic home of Pio de Jesus Pico, the last Governor of Mexican California, was built in the mid-1800s and recently reopened. His home was called El Ranchito, reflecting the rancho era of California. Wood, stucco and cast-iron gates and fences are primary materials. A “steer” icon is found throughout the park. The landscape is stark. Drought-tolerant plants with strong forms are used in contrast to the pale colors of stucco. Houses located in neighborhoods near the river reflect the rancho-era aesthetic.

Materials

- Heavy wood gates, fences
- Natural twig trellis, arbor, fence



Figure 3-56. The Reach 5 design palette shows the Rancho influence with stucco walls, wood fences and iron gates.

- Stucco walls, pilasters
- Cast iron gates, fences
- Sharp, bold leaves (yucca)

Forms

- “Steer” brand icon at Pio Pico
- Curved walls, signs
- “Alamo” façade form (City of Pico Rivera signage)

Colors

- Brown wood
- Black iron
- Tan, sand, beige, pale peach (stucco)

Native Plants

- *Amorpha fruticosa* (false indigo)
- *Baccharis pilularis* (coyote brush)



COURTESY OF NORTH EAST TREES



- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
- *Heteromeles arbutifolia* (toyon)
- *Juglans californica* (California walnut)
- *Malosma laurina* (laurel sumac)
- *Mimulus aurantiacus* (bush monkeyflower)
- *Platanus racemosa* (western sycamore)



COURTESY OF BRETT GOLDSTONE, NORTH EAST TREES

Figure 3-57. The Reach 6 design palette features industrial materials—concrete and metal—contrasting with cool sherbet colors.



Reach 6: Lower Coastal Plain

The overwhelming presence of engineered concrete dominates this section of the river. Human-built forms with cool sherbet colors are painted onto reclaimed water pipes and other utility facilities. The smooth and engineered surfaces of channel walls are repeated in drainage channels and at Bellflower's skateboard park. Concrete and metal edges are prevalent in this reach.

Materials

- Concrete
- Metal

Forms

- Angular, smooth surfaces
- Sleek, smooth surfaces

Colors

- Lavender, lilac, periwinkle
- Pink
- Yellow

Native Plants

- *Amorpha fruticosa* (false indigo)
- *Baccharis pilularis* (coyote brush)
- *Baccharis salicifolia* (mule fat)
- *Ceanothus sp.* (California lilac)
- *Elymus condensatus* (giant wild rye)
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- *Salix goodingii* (black willow)
- *Salix lasiolepis* (arroyo willow)
- *Salix lauegata* (red willow)

Adapting the Los Angeles River Functional Design Guidelines

Functional design standards provide standard or suggested dimensions and other specifications for river facilities and amenities, taking into account maintenance requirements, durability, safety, accessibility and overall quality control.

The Los Angeles River Master Plan Advisory Committee has developed design guidelines for implementing projects along the Los Angeles River. The Committee has provided three sets of guidelines: landscaping, maintenance and a signage manual. Both the landscaping and signage manuals are currently available, and the maintenance manual is expected later in 2004.

Since most of the functional specifications being developed for the LA River are universal, they are also applicable to the San Gabriel River. Because of the similarities between conditions along the Los Angeles and the San Gabriel Rivers, these LA River functional specifications are being adapted as technical approaches for the San Gabriel River Corridor Master Plan, and will be available in a separate stand-alone volume (see Appendix D, Design Guideline Topic Areas).

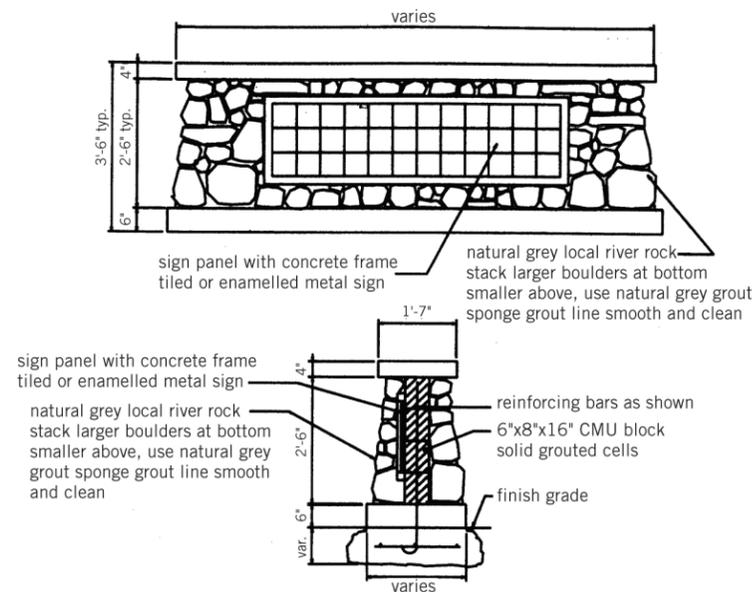


Figure 3-59. Design guidelines, such as this river rock wall detail from the “Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes” by LADPW, specify materials and design elements that blend with the river environment.

The LA River design guidelines, “Landscaping Guidelines and Plant Palettes for the Los Angeles River and Tujunga Wash,” provides functional specifications for both existing and new facilities along the river. The guidelines cover a wide range of topics, including land use, safety and maintenance standards for already existing functions and facilities along the river channel, such as the maintenance standards of the Los Angeles County Flood Control District. For instance, there are standards for both maintenance and emergency vehicle ingress and egress to the river, as determined by service road width, vegetation planning zones and access gate setbacks. Auxiliary function and maintenance requirements are also specified for the two utilities that maintain power lines and transmission towers on the service road or adjacent to the channel (i.e., for the City of Los Angeles Department of Water and Power and for Southern California Edison). This includes detailed specifications for such items as vegetation clearance around the base of transmission towers and plant height limitations. Specifications for other already existing facilities (such as requirements for bike paths and equestrian trails and facilities) are also provided.

The design guidelines also establish basic functional standards for a range of new amenities, trails and paths to be developed along the river such as:

- Fences
- Gates
- Lighting
- Benches
- Trash Receptacles
- Bollards
- Bike Racks
- Drinking Fountains
- Equestrian Amenities
- Emergency Call Boxes
- Pedestrian Paths
- Bicycle Paths
- Equestrian Trails

Project sponsors can use the functional standards as specified within the San Gabriel River Corridor Master Plan Design Guidelines Technical Appendix (available later this year) as a reference to assist with design and development of plans for their own specific projects. For a full listing of the topic areas contained in the Los Angeles River design guidelines, see Appendix C.

ILLUSTRATION COURTESY OF LADPW

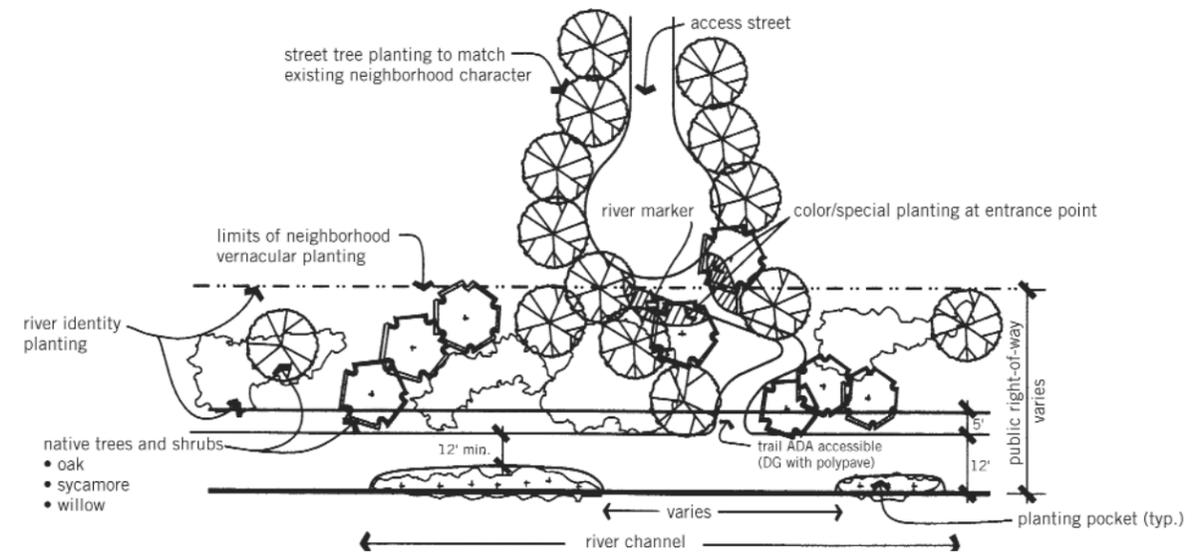


Figure 3-60. Los Angeles River design guidelines such as this street-end landscape concept from the “Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes” provide exact design specifications for river projects.

ILLUSTRATION COURTESY OF LADPW

3.8 CONCEPT DESIGN STUDIES

The Concept Design Studies are exercises that were carried out by members of the Steering Committee to illustrate how the Master Plan multi-objective approach might apply to projects in the San Gabriel River corridor. These studies are intended for illustration purposes only and are not in any way approved or recommended plans. For each of these sites, the actual planning process by project sponsors still needs to be carried out, including appropriate public involvement throughout.

The five Concept Design Studies illustrate how project planning can simultaneously address the multiple goals of the Master Plan. Lessons learned from these projects will help inform and guide the selection, planning, and design of all projects within the Master Plan project area.

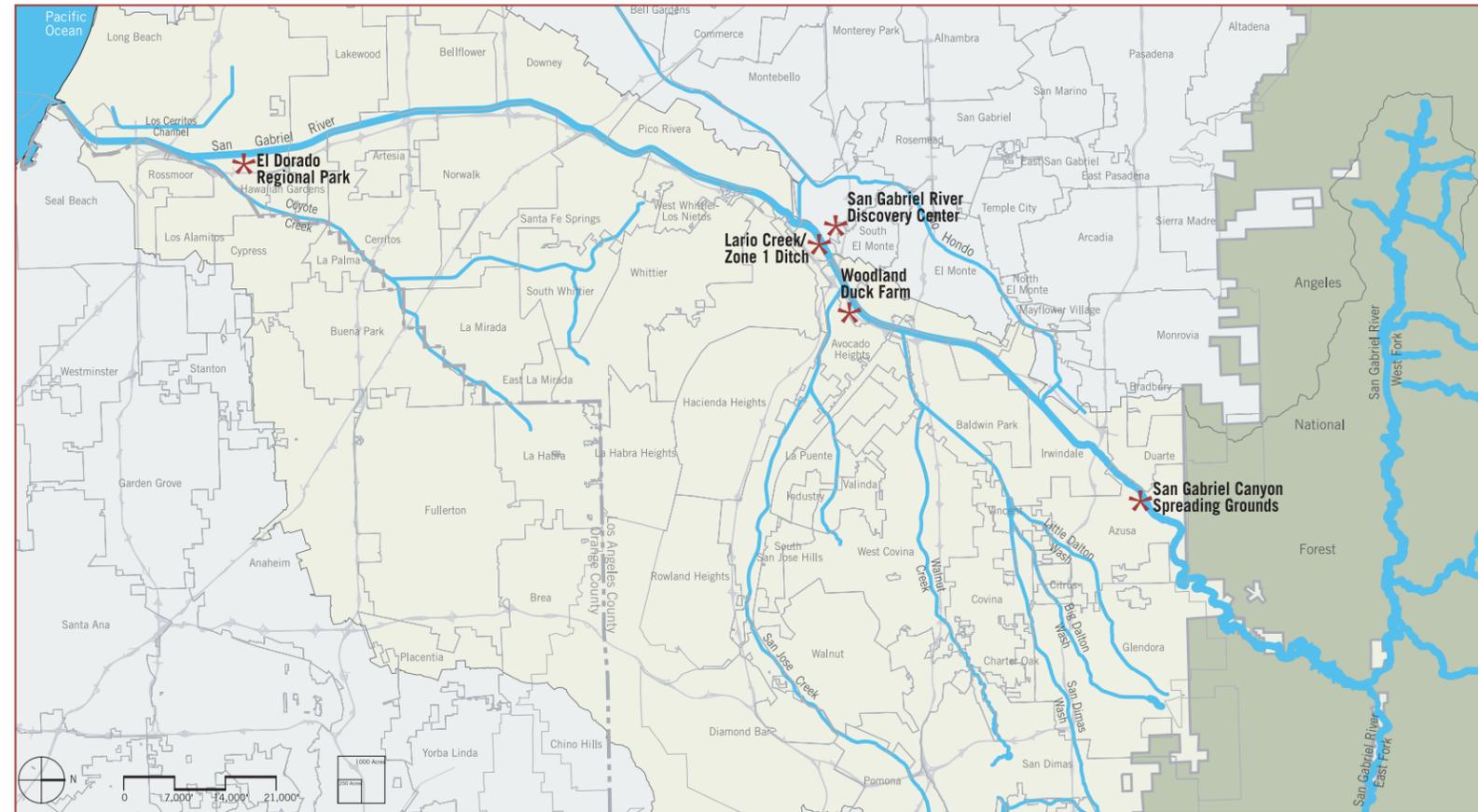
The San Gabriel River Master Plan Steering Committee selected the Concept Design Studies from the list of over 134 stakeholder projects.

Each individual Concept Design Study addresses multiple Master Plan Elements or comprehensively meets all the goals, objectives, and performance criteria of at least one Master Plan Element.

The five projects selected as Concept Design Studies represent all six Plan Elements (see Section 3.3), and the eight river enhancement concept categories (see Section 3.5). Diverse stakeholders—cities, public agencies, and community organizations—are among the many sponsors associated with these projects.

The five Concept Design Studies selected by the Steering Committee are:

- San Gabriel Canyon Spreading Grounds (Reach 3)
- Woodland Duck Farm (Reach 4)
- San Gabriel River Discovery Center at Whittier Narrows (Reach 4)
- Lario Creek/Zone 1 Ditch (Reach 4)
- El Dorado Regional Park Wetlands and Master Plan Update (Reach 6)



Map 3-9. The five Concept Design Studies.

Each study includes a project description, the opportunities offered by the project, specific issues and challenges that must be addressed, the initial design concepts, a site analysis, and a preliminary concept design.

As with all Master Plan projects, the Concept Design Studies can only be implemented if all existing water rights are protected, water supply sources are not diminished, and water quality is not degraded. This requirement

stems from more than a century of negotiation and litigation during which water rights to local surface and groundwater have been developed. The State Water Resources Control Board has declared the San Gabriel River fully appropriated, and that reality must be factored into the final design and planning of all projects in the Master Plan.

3.8.1 San Gabriel Canyon Spreading Grounds

Project Description

Once a gravel quarry, this 165-acre site now encompasses two deep spreading basins adjacent to the San Gabriel River. Native landscaping improvements will improve habitat and enhance views by aesthetically improving the appearance of the spreading basins. An interpretive trail and pocket parks at the northern and southern edge of the basins will increase recreational and educational opportunities.

Opportunity

As an adaptive re-use of gravel mining pits, the San Gabriel Canyon Spreading Basins were designed as purely functional, utilitarian facilities. The proposed improvements at this facility provide an excellent example of how existing water conservation infrastructure can be enhanced to serve other multi-purpose objectives, while still effectively carrying out its primary water supply functions.

A vast open space area lies adjacent to the river where the mountains meet the valley floor. The area offers spectacular views of the surrounding natural landscape. With the right landscaping, the pools of water held by the spreading basins can look like lakes reflecting the sky and the mountains. The proposed enhancements will create a more visually appealing place, offering passersby a serene environment for contemplation and passive recreation while also improving habitat.

The basins are currently surrounded by bare soils and concrete drainage structures that were installed to reduce erosion. Random pockets of native and non-native vegetation dot the landscape. Heavy trucks and other equipment move slowly along two parallel access roads encircling the basins. Adding to the stark industrial appearance of the site is a chain link fence surrounding the perimeter. Many residents of nearby Azusa may not even be aware of this barren landscape.



Figure 3-61. A pocket park with interpretive signage will offer spectacular views of the mountains.

Issues and Challenges

The primary mission of the spreading grounds and its accompanying facilities is water conservation; this mission will remain unchanged. The challenge is how to incorporate recreational and habitat enhancements without compromising this primary mission.

Safety, security, and liability concerns will pose a key challenge: would improvements to the site create an “attractive nuisance” (an issue that applies to several other sites along the river). Although a natural lake with steep banks can be a dangerous site, it does not create the same degree of liability as a human-built lake with steep banks. Since enhancements to the spreading grounds will create a more appealing environment, precautions must be taken to ensure public safety. Also, the water itself must be protected from accidental or intentional contamination. Finally,



Figure 3-62. A mountain backdrop against clear blue water is a perfect setting for a pocket park and trailside rest area.



Figure 3-63. Bare landscapes need softening, especially when adjacent to housing.

any improvements must take into consideration new and developing security measures.

For these reasons, while the site design may enable visitors to enjoy the landscaped grounds and scenic views, it must also keep them away from the steep edges of each basin, the open concrete channel, City of Azusa water facilities, and the water itself. In addition, landscaping should achieve the desired aesthetic effects without blocking views for security purposes.

Habitat restoration must be compatible with the primary water supply function of the site. Water surface elevation in the basins fluctuates an impressive 80 feet during the year, with a frequency more erratic than the natural wet/dry cycle. Water is released during the summer months, exposing the nearly vertical sides of the basins, relieved only by terraced earthen slopes for vehicular maintenance access. The bare soils are subject to erosion as the water rises and falls. These drastic water level

fluctuations and associated erosive forces must be taken into account in habitat design.

Large trucks moving loads of sediments traverse the narrow strips of land between and around the basins, busily arriving, circulating, and exiting the site. City and County maintenance access roads are in some cases parallel. This suggests an opportunity to consolidate roads parallel to the concrete channel, creating additional space for habitat restoration and trails.

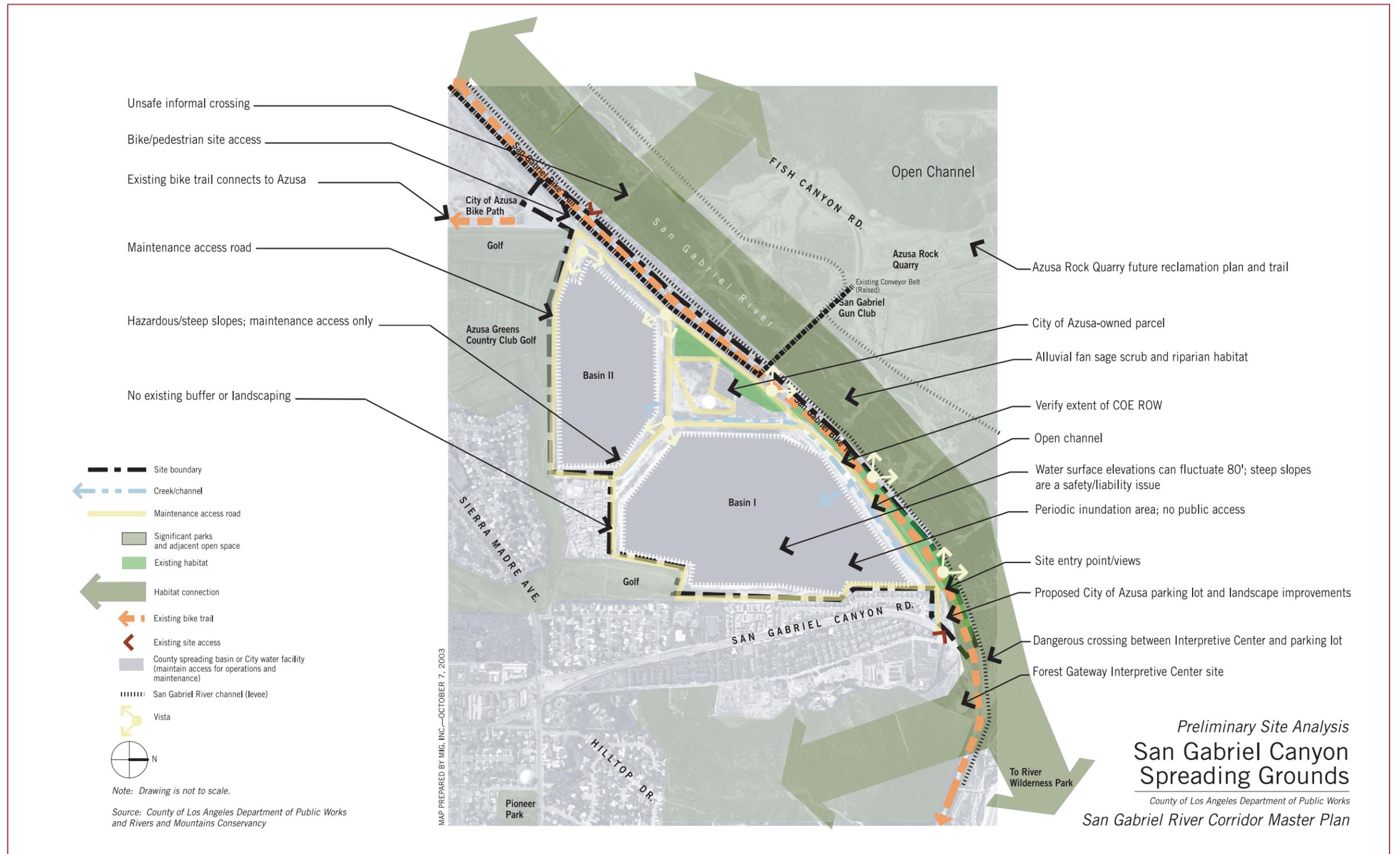
A gravel conveyor belt operated by Vulcan runs along the northwest edge of the basins. Aside from the function it performs, the aesthetic contrast of its pure industrial form slicing through the river floodplain is a powerful image, and could serve as a linear interpretive feature. The San Gabriel River Bike Trail runs along an elevated levee between the conveyor belt and the river, providing views of the spreading grounds and the surrounding landscape. However, there is currently no connection to the site and bike trail.

Design Concepts

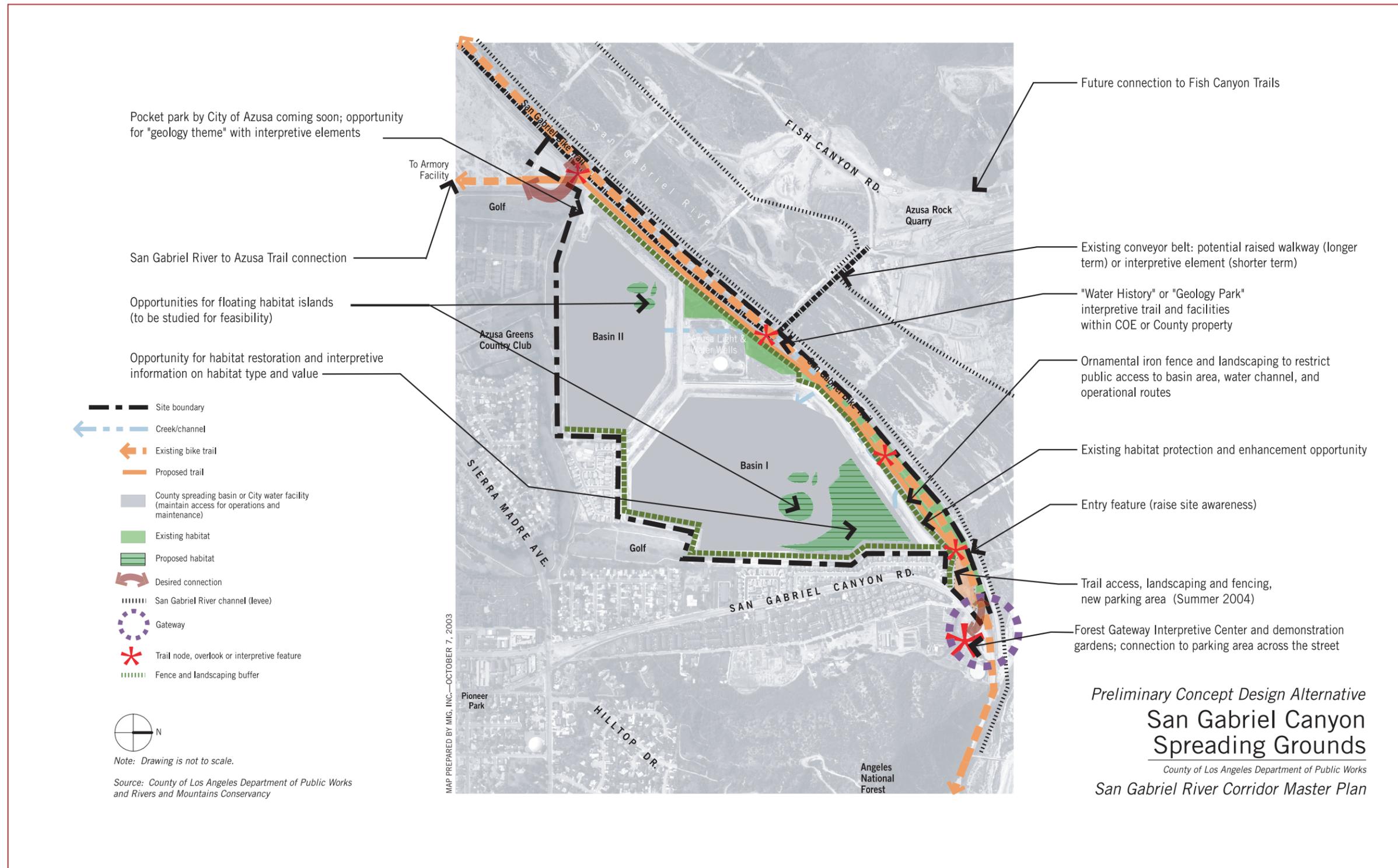
The spine of the proposed improvements is the interpretive trail, with nodes, amenities and destinations anchoring it to the site and its broader landscape context. While the meandering trail offers views and information about the site, fencing and vegetation block public access to both the basins and the concrete channel.

The existing chain link fence surrounding the perimeter of the facility should be replaced with a tubular steel or ornamental iron fence, which can maintain security yet improve aesthetics. This will also enhance public respect for the facility and its critical function of providing drinking water. Artwork on the fence or the fence design itself can follow this theme.

A “pocket park” will anchor each end of the new trail segment, one at the northwest corner and one at the southwest corner. These could be created by moving existing fence lines closer to the basins, creating pockets of land outside of the proposed new fences for the facility. The southwest



Map 3-10. Preliminary Site Analysis—San Gabriel Canyon Spreading Grounds.



Map 3-11. Preliminary Concept Design Alternative—San Gabriel Canyon Spreading Grounds. For illustration purposes only.

corner pocket could be a geology-theme park, in conjunction with the adjacent Vulcan operations. The northwest corner pocket could feature native landscaping, passive recreation, and interpretive signage. The triangular parcel between the two basins is the focal point of the site. This area has views of the spreading basins on three sides, and Fish Canyon and the San Gabriel River to the northwest.

Landscape improvements will provide native landscaping in key areas of the basin edges to improve habitat, enhance views, reduce reflected heat and light and decrease erosion. Habitat values should be maximized through the use of native plants beneficial to birds, small mammals, amphibians, reptiles and insects with access to the basins.

The existing native habitat (alluvial fan sage scrub) can be enhanced and supplemented near the spreading grounds. The beach area on the north side of Basin II and the triangle between the two basins are the largest areas at the site for potential habitat restoration. The shallow corners and edges of the spreading basins may be enhanced with riparian vegetation including willow trees, mule fat scrub, and baccharis scrub, but this may be modified to take into account fluctuating water levels. However, vegetated slopes are nature's way of minimizing erosion, and could be useful here. Vector control to mitigate mosquito breeding must be considered in the design and planning of any new habitat along the edges of the spreading basins.

Floating islands in the spreading basins are possible solutions for fluctuating water levels. These islands would be connected by a cable and weight system attached to the bottom of the basin. The islands would be planted with wetland vegetation providing habitat for breeding and migrating bird species. Kiosks on the trail could provide educational information about wetland habitats and wildlife. The benefits or impacts on water quality relating to attracting birds and other species will require further study because new wildlife could have impacts on water quality. Floating islands may also have a negative impact on maintenance and operations at the site. If habitat is established, LADPW maintenance activities and spreading operations may be affected. New regulations could possibly be imposed when new wildlife and recreation are introduced. If spreading operations are affected, opportunities to spread imported or local water may be missed. If the floating island concept is studied further, long-term assurances will be needed to ensure that the introduction of habitat is compatible with maintaining the facility's water conservation function.

Key Components of the Concept Design Study

- New multi-use trail, amenities, and vista points
- Fencing and native landscaping barriers to restrict public access to spreading basins, concrete channel, light/water facility and sensitive habitat areas
- Interpretive signage: geology, water supply and habitat themes
- Connections to the Gateway Interpretive Center, the San Gabriel River Bike Trail and the City of Azusa
- Existing habitat protection and enhancement
- Perimeter landscape improvements
- New pocket parks in southwest and northwest corners of site
- Floating habitat islands feasibility study

3.8.2 Woodland Duck Farm

Project Description

This project aims to transform an abandoned duck farm into a multi-use riverfront park with passive recreation and native habitat enhancements. Located on a long, narrow strip of land, this 57-acre site, squeezed between the San Gabriel River on the west and the 605 Freeway (San Gabriel) on the east, was the largest privately-owned open space adjacent to the river. Recognizing its unique potential, the Watershed Conservation Authority, a joint powers authority formed by the RMC and the Los Angeles County Flood Control District, purchased the site. Improvements could include interpretive trails, over-look points, habitat restoration, equestrian facilities and treatment wetlands.

Opportunity

When it closed in 2001, the Woodland Duck Farm had been in operation since 1950, the last remaining animal agricultural business in Los Angeles County. It left behind a flat, bleak landscape offering little in the way of shade and only a few scattered remnants of vegetation, mostly non-native. With the exception of a Spanish-style ranch house and remnant duck sheds, the only other remaining structures are tall utility towers marching along the full length of the property. Features of the original floodplain that once characterized this site were long ago obscured by the channelization of the river. Meanwhile, the drone of the freeway is a constant reminder of its proximity.

Yet, despite or even because of this stark setting, the site holds great promise as a possible model for other river-adjacent properties, demonstrating the extent to which it is possible to recreate some of the lost river environment. It also represents a tremendous opportunity to reclaim underused lands to benefit nearby communities long starved for open space and recreational facilities.

Strategically located between Whittier Narrows and the Santa Fe Dam Recreational Area, the Woodland Duck Farm can also provide a critical link in the proposed habitat corridor that will eventually extend from Puente Hills to the San Gabriel Mountains. The Sierra Club was among the first to recognize its strategic importance, not only for habitat but also for recreation and open space. The Sierra Club placed this site at the heart of its proposal for a San Gabriel Confluence Park, a conceptual study of a connected open space network extending from San Jose Creek to the Rio Hondo.

There are other opportunities as well. Current uses on the site include acreage leased for a nursery and an equestrian facility. While these uses are currently subject to short term leases and their continued presence and location would be subject to a site specific master plan, one or both might become a component of the future park. Reflecting the long-standing presence of nearby equestrian communities, acquisition of the Woodland Duck Farm presents an opportunity to preserve this singular recreational resource.

Two creeks on the site, Avocado and San Jose, may also help municipalities meet their mandated Total Maximum Daily Load Requirements (TMDLs). By incorporating best management practices to treat low flows from one or both creeks, the site can serve as an example for other river-adjacent properties with similar water treatment potential.

And, as further testimony to the importance of the Woodland Duck Farm site, RMC has selected the ranch house as the location for its future headquarters.

Issues and Challenges

Many challenges must be overcome to make the vision of a multi-objective riverfront park at the Woodland Duck Farm a reality. This project is a microcosm of the types of problems and opportunities existing elsewhere along the San Gabriel River. Improvements must be made to create a more appealing environment for prospective visitors to the park. There are also physical constraints that must be accommodated in the design. Given its former use as a duck farm, heavy nitrate loading may be a factor and potential contamination must be analyzed.



Figure 3-64. Separate equestrian and bike trails will follow along the treatment wetland.

A contamination plume in the groundwater located north of the Duck Farm property is a recognized EPA superfund site, and may need to be addressed in future park planning. The EPA should be consulted about contaminant migration. There are EPA clean-up programs currently in the area, such as the Baldwin Park Operable Unit.

Another design challenge will be how best to provide convenient access to a 2-mile-long by 500-foot-wide area bounded by the 605 Freeway, the San Gabriel River and San Jose Creek. Presently, only limited access to the site is possible via unmarked entrances under the freeway (including a utility easement, a freeway underpass, and a pedestrian entrance). Ironically, adjacent communities that desperately need parks are built right up to the western edge of the river, yet most have little connection to the waterway or the potential open space promised by the nearby duck farm site. Even



Figure 3-65. Southern California Edison towers dominate the landscape.



Figure 3-66. This existing house that once belonged to the Woodland family will become the new RMC headquarters.

the high school directly across the river from the site is strictly separated from the river by a series of chain link fences and hazard signs.

Sound barriers will be needed to buffer noise and other freeway affects. Earth berms or terraces can be planted that will create a green wall to mitigate freeway noise and improve views from both the site and the freeway. These will also create a green landmark that signals a riparian corridor.

Other planning issues to be addressed include the SCE and DWP utility towers that dominate much of the site. Fifteen-foot height restrictions under the power lines and the operating requirements of the utilities, including the need to maintain vehicular access will shape park and habitat restoration plans. A safe harbor agreement may be required if utility companies are to allow native plantings within their right-of-way and easements. The possibility of a safe harbor agreement, as established under the Endangered Species Act, will need to be investigated,

Although it is a large open space adjacent to the river, a combination of factors limits the site's suitability for floodplain restoration. The freeway bounds the site on one side, making it too narrow to accommodate an adequate terraced levee and broader floodplain. In addition, the volume and timing of flows in the river—from Avocado Creek, San Jose Creek,

and releases from upstream sources—fluctuate unpredictably according to supply and demand. Vegetative clearing for flood control maintenance further diminishes the possibility of native habitat restoration in the soft-bottom channel.

On the site itself, existing vegetation is dominated by non-native ruderal (weedy) vegetation, although there are some native species present. However, channelization of the river changed the hydrology, soils, and water table to such a degree, that the native riparian vegetation may not be established again without irrigation or some other water supply.

As with many locations along the river, what is now largely deserted vacant land can become a public safety issue. Equestrians traveling alone have been particularly concerned about encampments or undesirable confrontations in the confluence area thickets. So it is essential to create both the appearance and the reality of a safe environment. Fire trucks and other emergency vehicles need access to the property to ensure quick response times for public safety. That access will also facilitate regular patrols by local police and the County Sheriff, which will discourage vandalism and other illegal activities, and further enhance public safety.

Design Concepts

Although the RMC plans to work with the community and other stakeholders to help develop a final specific design for the duck farm site, some general design concepts can be anticipated.

Site entry and access points will have to be safe and clearly defined for park visitors. Primary site access for vehicles and parking may be provided through the freeway underpass linking the equestrian center on the east side of the San Gabriel Freeway to the main portion of the duck farm property on the west side. At the southwest corner of the property, a new bike and pedestrian bridge will connect the San Jose Creek Bike Trail and the San Gabriel River Bike Trail. It will also provide the communities on the far side of the river with direct, convenient access to the duck farm. Emergency access points may need to be located at the utility easement at the north side of the property and the planned bridge at the southern end of the property.

A major programmatic feature of the site includes the possibility of treating stormwater runoff from Avocado Creek. One approach is to use sinuous treatment wetlands braided across the site, parallel to the river.

Surface flows provide an opportunity to simultaneously meet recreational and habitat objectives. Access to the SCE towers for maintenance vehicles can be maintained, with open space near but not under the towers used for the wetland. If half of the available open space were used for the wetlands (from the golf course south to San Jose Creek), about 15 acres would be available, which could effectively treat almost 400 acres of the first three-quarter inches of urban runoff. However, the Avocado Creek channel is 15 feet below grade, so a long swale or wetland would require pumping or a large amount of excavation throughout the site.

Another option may be a 3-acre wet detention basin, essentially an artificial lake with emergent wetland vegetation around the perimeter. The wet detention basin would be an effective means for removing suspended sediments, nutrients and metals, and would also be aesthetically pleasing because of the permanent pool and vegetation. Unlike the treatment wetlands, it would not require as much excavation but it would require inflow on a regular basis to maintain the water level. Soils excavated to create the treatment wetlands or the basins could be used as fill to create berms along the freeway for sound barriers.

To minimize mosquito breeding, vector control would have to be carefully considered for either the treatment wetlands or the wet detention basin.

In addition, for emergency and safety reasons, no ponding of water under power lines is allowed under current SCE policy. This requirement reflects SCE's status as an investor-owned utility regulated by the California Public Utilities Commission. The regulatory condition limits SCE's flexibility much more than municipal utilities, like the DWP. This requirement would have to be addressed in the design and siting of treatment wetlands or a wet detention basin.

Additional water flows might be provided by two rubber dams the LADPW plans to locate in the San Gabriel River adjacent to the Duck Farm. A third rubber dam is already in operation near the northern end of the site. These water conservation structures could provide a modest increase in riparian habitat in the channel or flow diversions from the rubber dams might help support habitat restoration on the duck farm site. Existing water rights would have to be maintained in the design of any water diversion onto the Woodland Duck Farm site.

Much of the duck farm site could be re-vegetated with native species, but the soil type and the depth of the groundwater table are critical factors in determining the type of habitats that could be supported. If the soils and groundwater levels are conducive to riparian habitat, a mosaic of willow, sycamore and cottonwood would be appropriate. If riparian habitat could not be sustained, a mosaic of upland scrub vegetation, including sage scrub, mule fat, and elderberry woodland would be appropriate. Habitat restoration, along with the treatment wetlands or wet detention ponds, will enable the duck farm to function as one important linkage in the Puente Hills to San Gabriel Mountains habitat corridor.

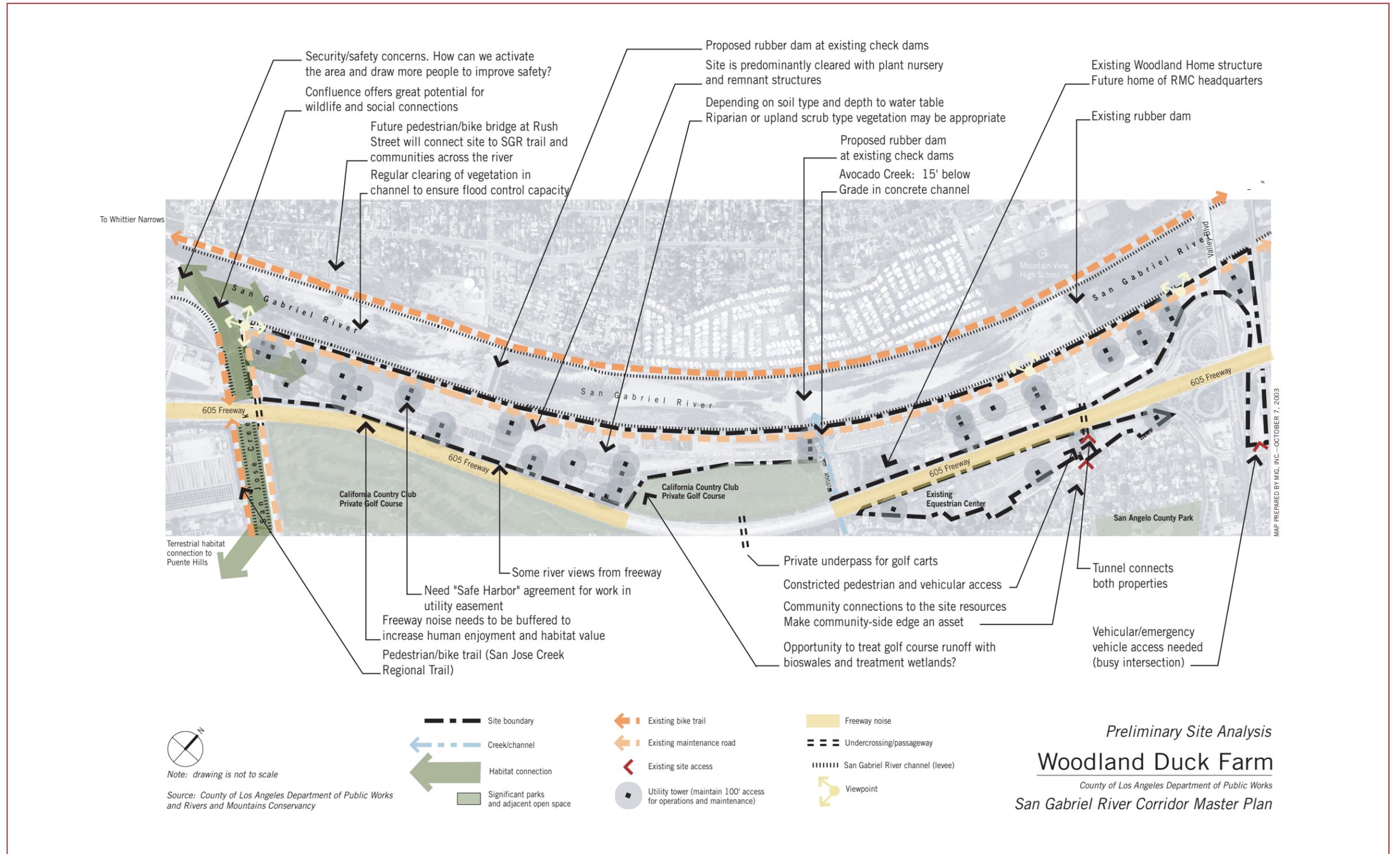
A series of multi-use trails, trail nodes and educational kiosks can be integrated throughout the site, winding through the treatment wetlands and offering a variety of experiences from short loops to longer trail circuits. Signage along the way will orient trail users to the site features, the San Gabriel River, San Jose Creek and to their place along the river corridor. An overlook at the confluence could explain its significant biological richness.

Using utility easements for open space and trails is an important feature of the project design. A stepping-stone approach is suggested, beginning with first phase implementation with trails and non-native, low-water use plants. If a safe harbor agreement is in place, a second phase of low-growing native plants and habitat can be established. All plantings, non-native and native, would have to be consistent with the ground and aerial clearances for the towers.

Plans for the new RMC headquarters in the original ranch house may include demonstration gardens, outdoor gathering spaces, and other exhibits. Site and building development should demonstrate green building techniques and an attractive, watershed-appropriate site design. The overall plan for the Duck Farm project might also include additional visitor serving facilities and other enhancements including improved equestrian trails, paths and linkages.

Key Components of the Concept Design Study

- Improved site access and parking
- Re-vegetation and habitat restoration
- Treatment wetlands and bioswales or wet detention basins to treat low flows from Avocado Creek
- Multi-use trails for improved site circulation, wayfinding and interpretive features
- Designated habitat and recreational spaces
- Wildlife habitat corridor connections
- Educational and interpretive opportunities
- Improved equestrian trails, paths, linkages and facilities
- Planted berm to buffer freeway noise
- Spanish style-ranch house as new RMC/WCA headquarters
- Native plant nursery



Map 3-12. Preliminary Site Analysis—Woodland Duck Farm.