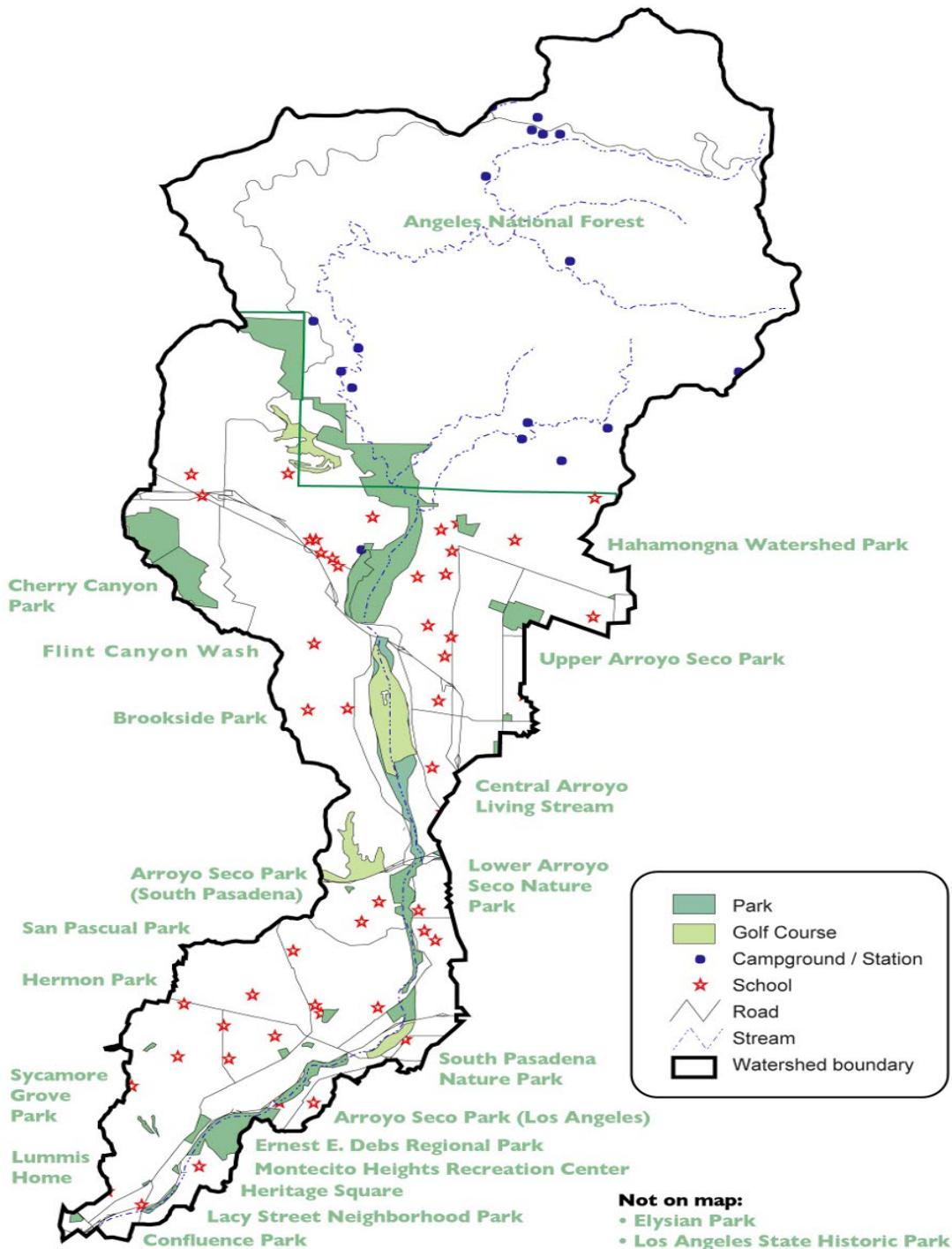


ARROYO RIVER PARKS



**Restoring a Living River in the Arroyo Seco,
a proposal to Shape the USACE Arroyo Seco Ecosystem EIS
Alternatives, presented by the Arroyo Seco Foundation**

October 29, 2014

Arroyo River Parks

2014 presents an historic opportunity to restore and enhance the Arroyo Seco River. Now that the U.S. Army Corps of Engineers has adopted an ambitious \$1-billion proposal to restore an 11-mile stretch of the Los Angeles River, attention is turning to the Arroyo Seco and its future.

The Arroyo Seco Confluence with the Los Angeles River is included in the Army Corps' LA River Study, but additionally the Corps has been conducting a similar plan for the entire Arroyo Seco extending up to the San Gabriel Mountains. The Corps' Arroyo Seco Watershed Feasibility Study provides an enormous opportunity for massive river restoration throughout the urban portion of the Arroyo watershed. In response to the Corps' desire for community involvement, the Arroyo Seco Foundation has developed a guiding vision for this restoration - the Arroyo River Parks Program.

Arroyo River Parks Vision

The goal of the Arroyo River Parks Program is to link existing parks and open spaces to each other and to the river. Rather than focusing on a few key sites along the eleven mile urbanized stream course, Arroyo River Parks is an approach that will integrate the more than 30 parks and open space linkages that line the concretized stream as part of a cohesive network supporting hydrological, ecological, and social connections - and emphasizing respect for place. Rather than just being parks that overlook a river, these parks and open spaces will be reconfigured as part of the river system.

Arroyo River Parks Principles

- Integrate parks with the river and the river with the parks
- Manage parks and open space to aid flood protection and water conservation and quality
- Develop open space linkages for wildlife movement
- Naturalize the stream and floodplain to restore riparian and aquatic habitat
- Expand the trail network to connect parks, open spaces and cultural resources
- Provide interpretative signage and educational programs to make the Arroyo an educational laboratory for Southern California

Project elements that conform with the Arroyo River Parks approach are broken out into the four areas of the Arroyo Seco below.

Area 1: Hahamongna Watershed Park



For 1.5 miles at the foot of the mountains, the Arroyo Seco stream is a natural channel flowing through an alluvial flood basin in the Devil's Gate Dam reservoir area.

Potential projects:

1. Integrating wetland restoration and enhanced percolation methods

- Hahamongna Watershed Park is the most important area for natural resources management in the watershed, including habitat, sediment, open space, and power transmission, but with particular importance for water resources. The water resources management issues in Hahamongna are very delicate and critical to the environment, people and habitat. Hahamongna serves as the main groundwater recharge site throughout the watershed, and throughout the region. Contamination of groundwater from the Jet Propulsion Laboratory has been a major obstacle for providing clean drinking water to residents relying on Raymond Basin Groundwater as a source of fresh, potable water. The watershed area of Hahamongna is about 30 square miles, draining the entire natural upper watershed, and the urban areas of La Canada, Altadena and Pasadena. Storm water from these urban areas impacts the habitat and recreational activities of Hahamongna. Integrating storm water management with groundwater recharge will be a "win win" for water resources in Hahamongna, and will set the bar for MS4 permit projects. The opportunity for storm water remediation and groundwater recharge culminates perfectly with the potential for wetland habitat restoration in Hahamongna Watershed Park.

2. Bird nesting preservation

- The Least Bell's Vireo, an endangered bird species, has been recently identified to be seasonally nesting in Hahamongna. With the LA County Sediment Removal and Management Program set

be begin shortly, along with the JPL parking structure, Pasadena's formerly titled "Multi-Benefit/Multi-Use" project, the Arroyo Seco Canyon Project and other development projects in the area, the potential for disturbing the birds of Hahamongna is quite large. Hahamongna is one of the best locations for bird habitat in Southern California, and a project to ensure the preservation of high quality bird nesting habitat is needed immediately.



Photo by James Gallagher, Sea and Sage Audubon

3. Riparian canopy along stream out of the canyon

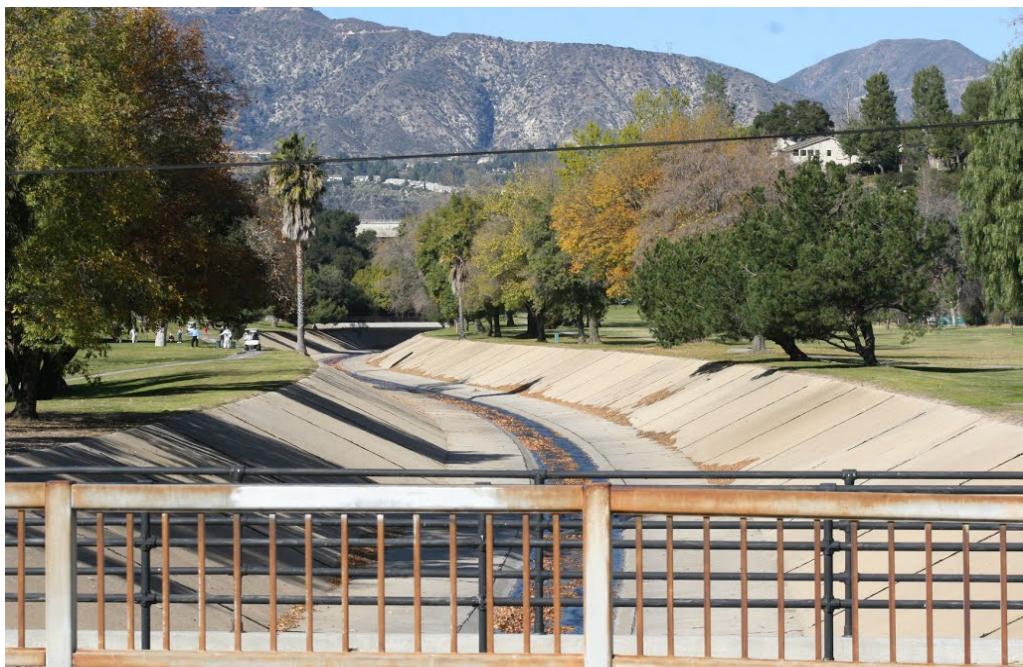
- Hahamongna is the interface between a wild, scenic, mountainous and mostly natural river, and the concrete lined, high velocity, storm drain fed river of the Los Angeles urban plane. The river habitat should be capable of providing aquatic habitat, native vegetation, natural sediment dynamics, clean and fresh water, and should also be accessible to recreational users of Hahamongna. A key ingredient in these goals is the riverside canopy providing shade, habitat, stability and aesthetics to a natural open space area that is accessible to millions of LA County residents.



Area 2: Brookside Area

Central Arroyo Seco (2.5 miles in length, which includes Brookside Park and the Rose Bowl): From Devil's Gate Dam, the Arroyo Seco flows through a short natural canyon under the 210 Freeway; at the northern end of Brookside Golf Course, it is diverted into a trapezoidal concrete channel extending from to Seco Street. South of Seco Street, the Arroyo Seco transitions to a rectangular concrete channel, extending 750 feet south to the natural unlined streamzone passing under the Holly Street and the SR-134 bridges before reaching the Colorado Street Bridge.

Potential projects:



4. Brookside Park Golf Course

- The Brookside Park Golf Course Arroyo Seco Channel Naturalization project is an integrated recreation, water resource, and habitat enhancement project within Brookside Park extending from Devil's Gate Dam downstream to the Colorado Street Bridge that will improve public safety, recreation, flood control, sedimentation, water quality, and ecosystem health not only in the Brookside Park Central Arroyo area, but also in downstream reaches extending to the Los Angeles River and beyond. This project culminates years of grassroots planning efforts and analysis focusing on Southern California ecosystems that are becoming increasingly endangered and dynamic geomorphic processes that can no longer be ignored. This golf course has over two hundred acres of potential riparian habitat. Restoring the stream and creating a river-friendly golf course will integrate a habitat restoration project with a unique public golfing venue.

5. The Rose Bowl

- The Rose Bowl is one of the most iconic images of Pasadena, and is one of the biggest attractions in Southern California. The natural setting and the beautiful environment are the

features that are most often cited for the Rose Bowl's unique appeal. While this is undeniable, the potential for improving the natural ecosystem function and habitat value of the area and enhancing the aesthetics further has often been overlooked. The gigantic parking area of the Rose Bowl is land use in direct contradiction to the natural ecosystem and watershed management principles. The floodplain of the Arroyo Seco near the Rose Bowl has been robbed of its habitat and biodiversity. ASF's Central Arroyo Stream Restoration Program (2008), which restored the native Arroyo chub, implemented a very successful land use scheme that is a model of how to provide the millions of visitors to the area with their recreational and parking needs, while restoring high quality ecosystem function in the area.

Area 3: Lower Arroyo Seco Park

Pasadena's Lower Arroyo Seco (1.5 miles in length): This reach, which extends from the Colorado Street Bridge to the South Pasadena boundary, has been described as one of the best candidates for urban stream restoration in the United States. At the Colorado Street Bridge, the natural Arroyo Seco stream channel flows over a spillway back into a massive concrete channel. The channel is located in a narrow, deeply incised canyon surrounded by quiet residential neighborhoods.



Potential Projects:

6. Lower Arroyo Stream Restoration

Project Elements

- Remove the concrete flood channel and restore streamzone habitat from just downstream of the Colorado Street Bridge to the Pasadena city limit. This project would restore a fully functioning stream and ecosystem influenced by natural hydrology, including periodic flooding, without increasing the risk of flood damage to private or public property. This project will enhance public access to rivers and the great outdoors, connect wildlife from the San Gabriel Mountains to the Santa Monica Mountains, and improve water quality in the Arroyo Seco and Los Angeles River Watershed.

The Lower Arroyo Seco is one of the most beloved and cherished landmarks in Pasadena because of its open space, recreation and access to nature. This area is known throughout the region for its natural setting, peacefulness and abundant wildlife. The potential for a complete restoration of historical ecosystem function is very high, and Pasadena policy documents have backed the restoration for more than thirty years. Unlike many sites along the channelized Los Angeles River Watershed, there are few

manmade structures in this stretch so removing the concrete from the stream in the Lower Arroyo would have minimal impact on flood protection and could actually improve it. The Post-WWII concrete has handled flood flows in the area, but it is now aging and crying out for a more sustainable approach to stream and flood management. There is little risk of from even the highest of potential floods. The Lower Arroyo Seco Channel Removal Project is a culmination of years of grassroots planning efforts and analysis focusing on southern California ecosystems. This area is very valuable for habitat and wildlife connectivity, including aquatic habit. The Lower Arroyo has had its share of anthropogenic stressors on its ecosystem, but has endured and thrived with the help of many decades of conservation and restoration activities.



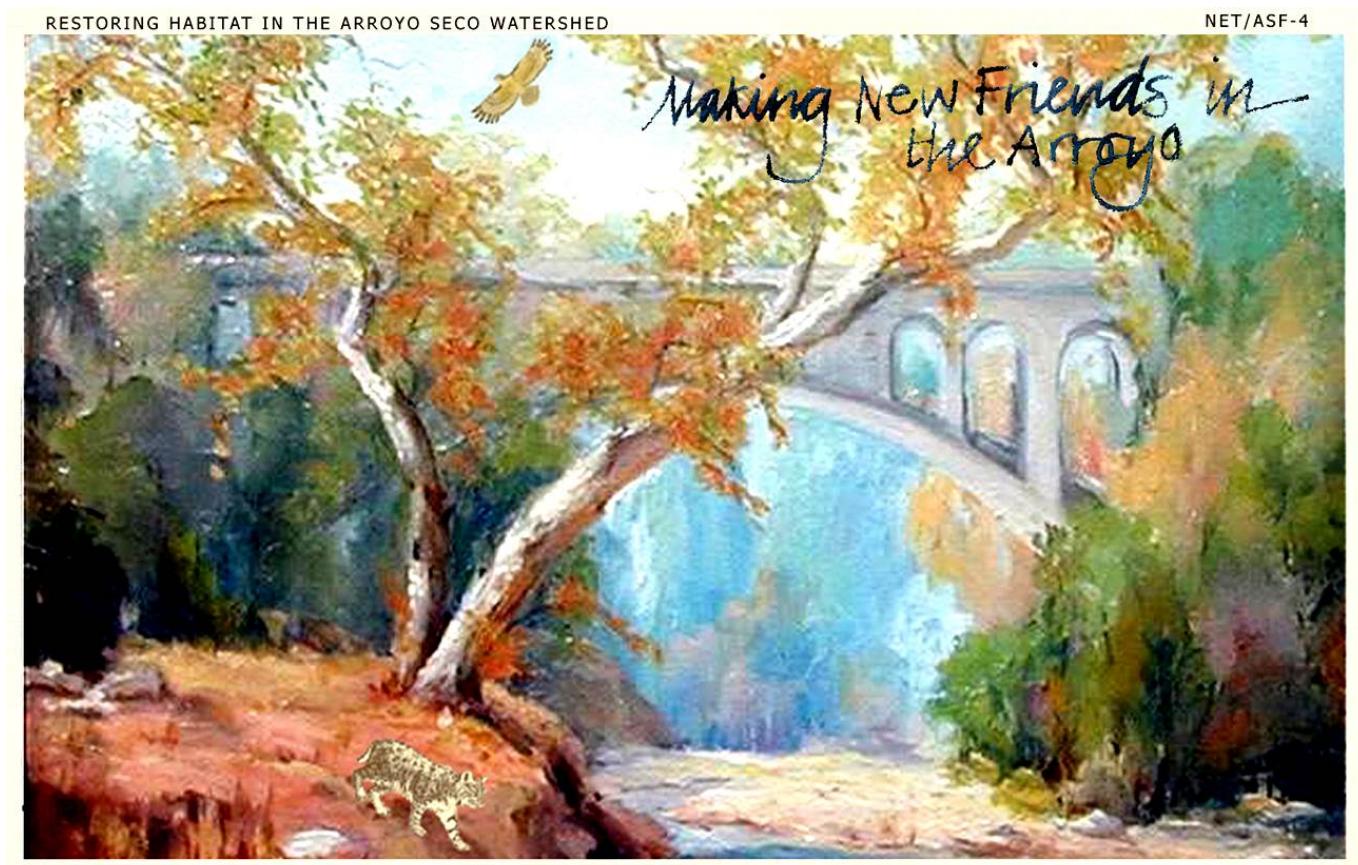
Project components should be designed to:

- Improve flood water, sediment and debris conveyance and storage through reestablishment of a natural channel/floodplain system
- Improve water quality due to floodplain and groundwater/surface water interactions that remove sediment and filter flows
- Restore endangered aquatic and riparian ecosystem communities
- Reestablish fish passage through the elimination of migration barriers including the concrete channel and the spillway from the newly restored Central Arroyo Seco.
- Provide active and passive recreational areas that are integrated into native ecosystem habitats
- Provide an awareness of the impacts of river channelization, water quality issues, invasive habitat and the benefits of an ecosystem influenced by natural hydrology.

7. San Rafael Creek

- Just opposite the foot of West Columbia Street, San Rafael Creek enters the Arroyo. This creek formed the principle drainage of the lower San Rafael area. The stream flows from Johnson Lake down into the Arroyo. Only about 250 feet of the stream have been channelized. This site is an excellent candidate for an inexpensive but very productive stream restoration that could restore the natural character of the stream and a 2 acre wetlands zone right where Pasadena, South

Pasadena and Los Angeles city limits all come together.



Area 4: The Arroyo Seco through Los Angeles

Los Angeles Arroyo Seco (5.5 miles in length): The Arroyo Seco stream travels through a stretch lined on one side by South Pasadena and on the other by Los Angeles; at the York Blvd. Bridge, the Arroyo River proceeds through a narrow, highly urbanized canyon lined with a series of Los Angeles Parks down to the confluence with the Los Angeles River.

8. South Pasadena/Los Angeles Interface

- As the Arroyo stream reaches the transition zone between Pasadena, South Pasadena and Los Angeles, there are excellent opportunities for restoring a naturalized stream with riparian habitat and wetlands. Near San Pasqual Drive, the Arroyo Seco stream is surrounded by San Pasqual Park, a Los Angeles city park on the west side, and Sycamore Park, a South Pasadena park on the east. These parks could be outstanding examples of Arroyo River Parks, providing stream restoration and habitat enhancements as well as water quality improvements and stormwater capture.

Just to the south of the Arroyo Seco Parkway (aka Pasadena Freeway), the stream turns westward and is bordered by a large island of land that could be molded into the river with terraces and habitat improvements. On the south side of the Arroyo stream is the golf course, which will soon accommodate a pedestrian and bicycle trail, and the existing South Pasadena Nature Park that could be linked to the streambed. The island is owned by the City of Los Angeles, while the other side of the stream is in South Pasadena.

Arroyo Seco River Parks through the City of Los Angeles

Project Elements

The Arroyo Seco is lined with parks from the very top near the famous Mt. Wilson Observatory to about 2 miles upstream from the Confluence with the Los Angeles River. Some of these parks, up until the Los Angeles city limit, integrate the river and appropriate riparian habitat with recreational opportunities. The Arroyo Seco River Parks system through the City of Los Angeles will complete the stream side trail



system for the entire 22 mile Arroyo Seco. The implementation of river themed parks, complete with river access, stormwater capture, riparian and wetland habitat, and water quality improvements will maintain

traditional park uses while enhancing recreational opportunities and environmental awareness.

9. North Branch - Sycamore Grove Park

- A major tributary of the Arroyo Seco flows across Highland Park from the San Rafael Hills and enters the Arroyo Seco stream at Sycamore Grove Park. The North Branch stream used to flow gently through Sycamore Grove Park but many years ago the stream was put into a major pipe that now runs beneath the park. There is excellent potential for daylighting that stream and restoring a rich riparian zone in the park.

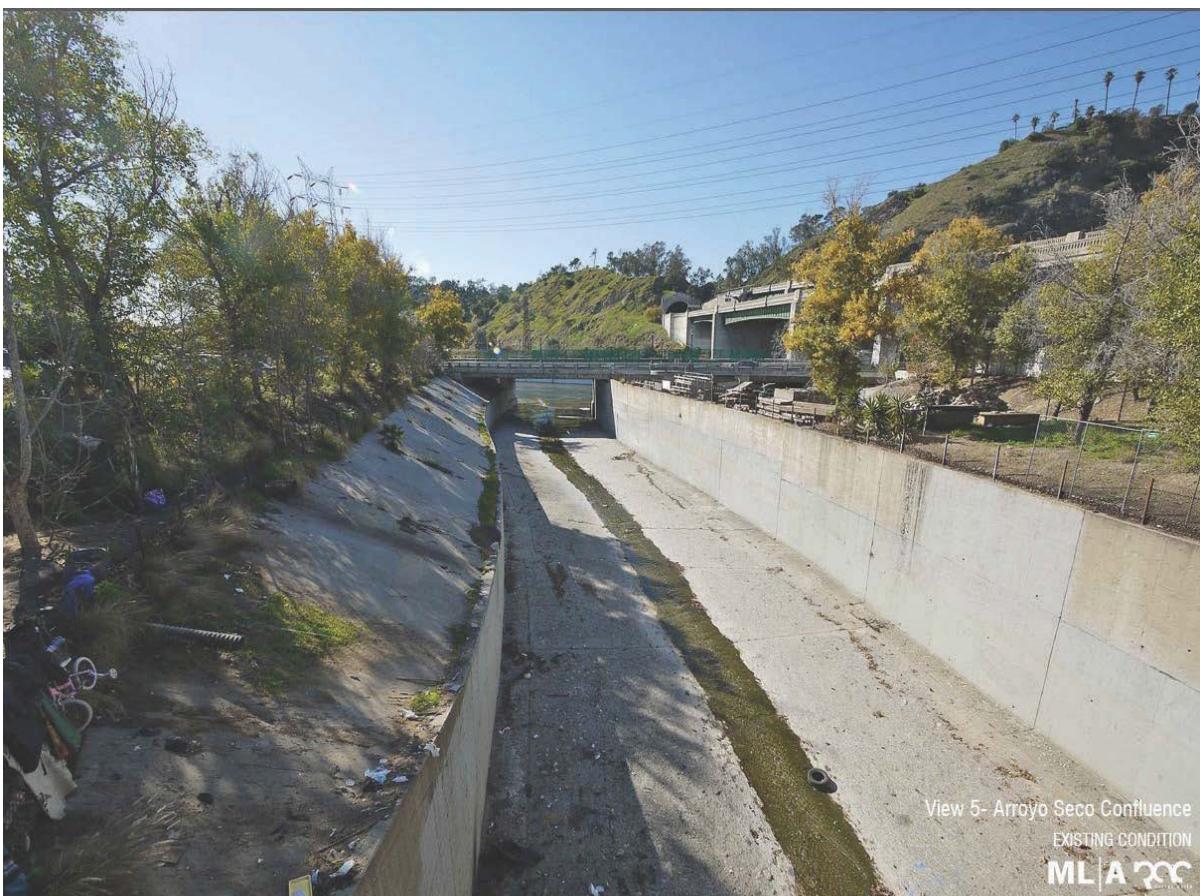
10. Lower Arroyo Linkages

- The Lower Arroyo Linkages project is a series of integrated transportation, water resource, and habitat enhancement projects along the lower Arroyo Seco river corridor that will improve public safety, transportation, economic vitality, recreation, water quality, and ecosystem health in neighborhoods in the City of Los Angeles, including Highland Park, Mt. Washington, Garvanza, Hermon, Montecito Heights, and Cypress Park. In the lower reaches of the watershed, this project is a culmination of years of grassroots planning efforts focusing on the spine of the Arroyo Seco Watershed: the Arroyo Seco and the Arroyo Seco Parkway (a National Scenic Byway Corridor).



11. Integration with the LA River Ecosystem Restoration

- The US Army Corps of Engineers is completing an Ecosystem Restoration Program on the Los Angeles River through the "ARBOR" reach from Glendale narrows to downtown Los Angeles. This program includes the Arroyo Seco Confluence from the Los Angeles River up half a mile of the Arroyo Seco River. Major restoration of The Confluence area will include removal of concrete, expanding the flood prone width of the river, establishment of wetland and riparian habitat, and trail connectivity. The Arroyo Seco is presented with the amazing fortune of being included in two USACE ecosystem programs. This unique opportunity will allow for a comprehensive ecosystem enhancement and massive river restoration throughout the urban portion of the river. The two programs should coordinate and cooperate throughout their life spans to provide maximum benefit to habitat, stream restoration, water resources, recreation and quality of life.



Two contemporary views of the Arroyo Seco Confluence