

Reclaiming Trabuco Creek: Linking Communities Master Plan San Juan Capistrano, California

PROJECT STATEMENT

Trabuco Creek exhibits the common characteristics of an underutilized urbanized waterway: **extensive concrete hardscape, unsuitable habitat, and disconnects communities.** By designing a space to engage and educate the community about ecological diversity, the **Trabuco Creek** waterway **provides community connections to nature, neighborhoods, and the City center.**

Restoration of **Trabuco Creek** incorporates a design that responds to the **needs of the watershed** as well as the **community.** The **design** proposes to reclaiming **Trabuco Creek** as an **accessible waterway** and **green space** that belongs to the community. What was once a concrete divide is now the **common linkage that pulls the community into a natural environment** experience.

PROJECT GOALS & OBJECTIVES

Green Flood Control

- **Restore** concrete channel into former natural waterway
- **Provide** flood control by increasing flow capacity and slowing velocity
- **Improve** water quality



Reclaim Habitat

- **Reduce** hardscape and increase vegetated habitat
- **Design** natural space for community to explore and students to learn
- **Provide** habitat and increase biodiversity



Connect Neighborhoods

- **Create** access from residences to creek, trails, and parks
- **Provide** access to trails for all users, including seating, shaded paths, and opportunities for access to water
- **Design** spaces for community use, including passive space



Outdoor Education

- **Create** outdoor environmental learning opportunities for young student population
- **Provide** access to water and habitat for learning opportunities
- **Connect** students, community, and City



BIG IDEA

TRABUCO CREEK:

The common linkage between the:

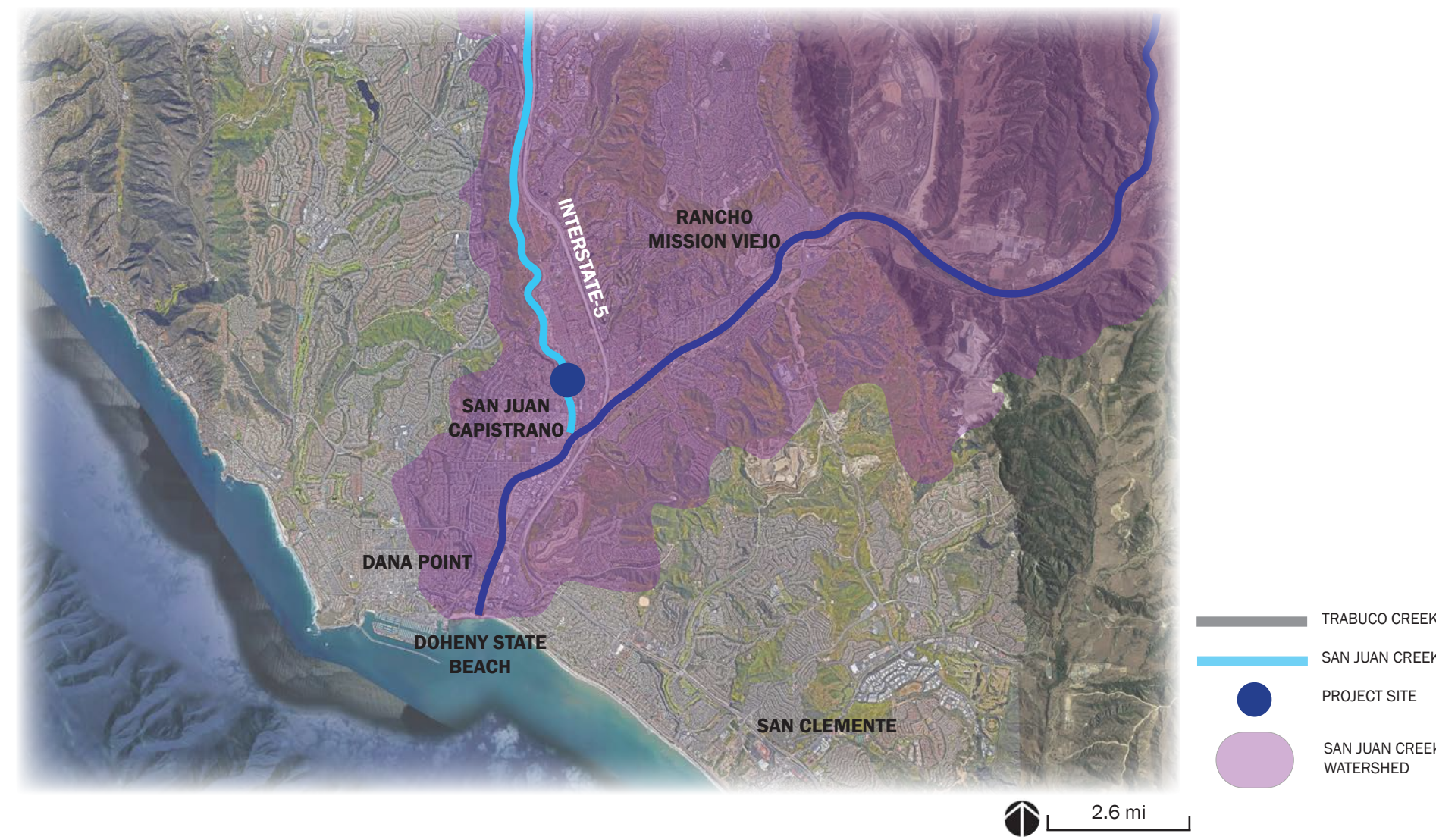
- **Environment**
- **Community**
- **City**



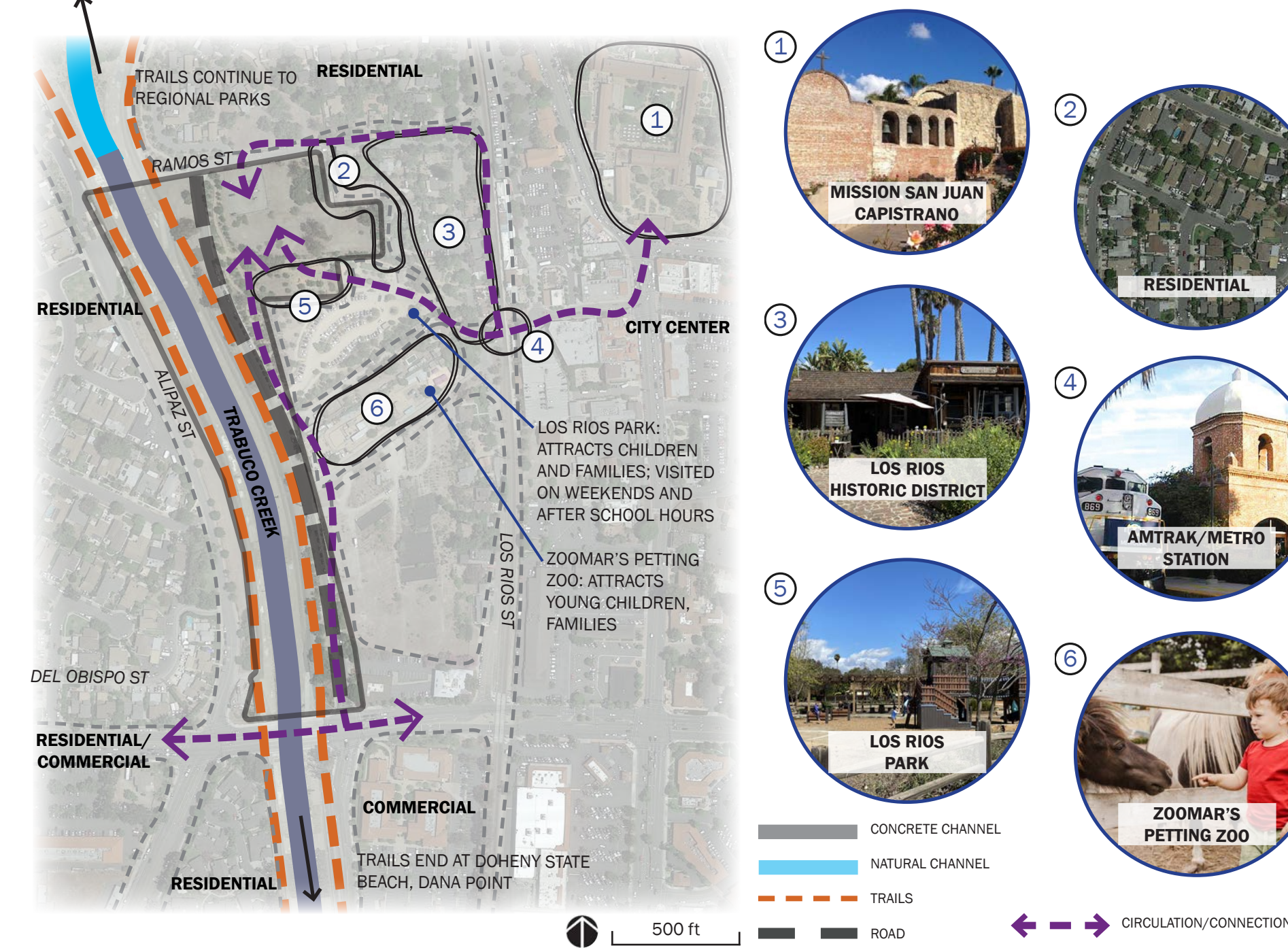
In August 2002, the **U.S. Army Corps of Engineers** prepared a **San Juan Creek Watershed Study** that identified the lower portion of the **Trabuco Creek** as a

- **flood risk,**
- **the most unstable reach in the watershed drainage system,** and
- **poor riparian habitat.**

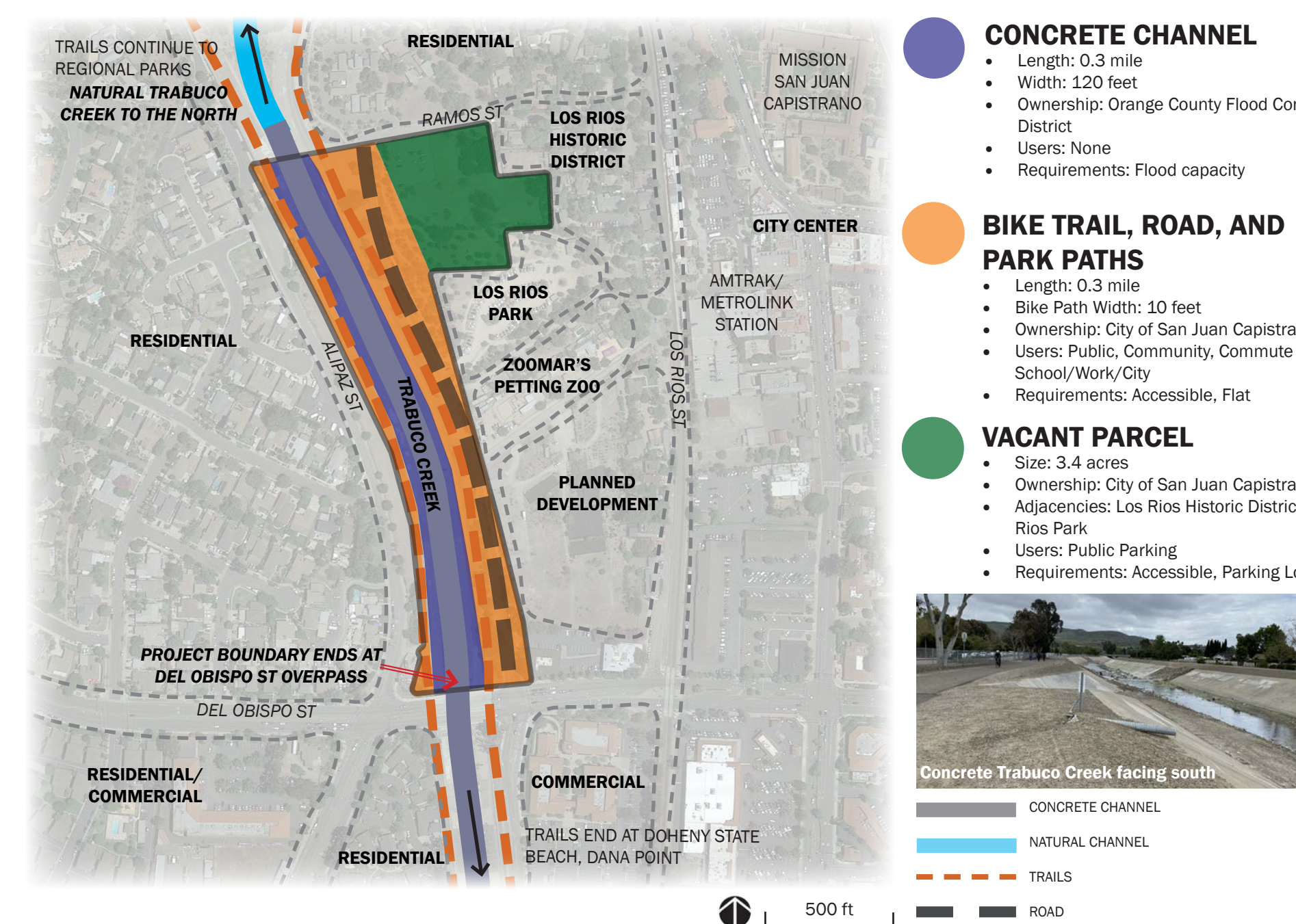
SAN JUAN CREEK WATERSHED



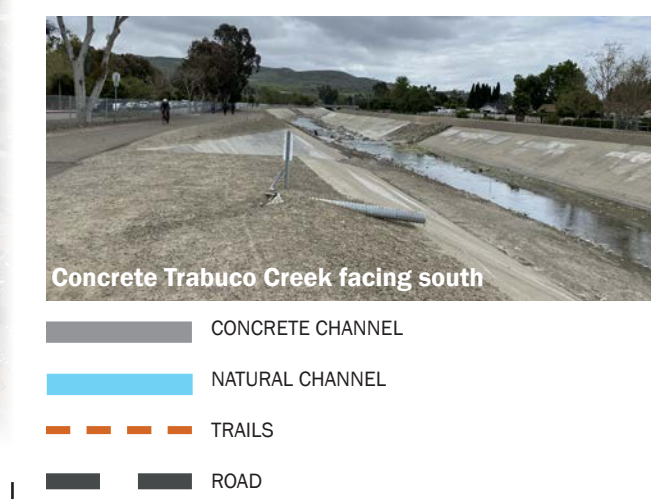
SITE CONTEXT



PROJECT SITE

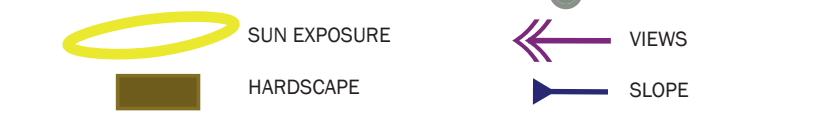


- **CONCRETE CHANNEL**
 - Length: 0.3 mile
 - Width: 120 feet
 - Ownership: Orange County Flood Control District
 - Users: None
 - Requirements: Flood capacity
- **BIKE TRAIL, ROAD, AND PARK PATHS**
 - Length: 0.3 mile
 - Bike Path Width: 10 feet
 - Ownership: City of San Juan Capistrano
 - Users: Public, Community, Commute to School/Work/City
 - Requirements: Accessible, Flat
- **VACANT PARCEL**
 - Size: 3.4 acres
 - Ownership: City of San Juan Capistrano
 - Adjacencies: Los Rios Historic District, Los Rios Park
 - Users: Public Parking
 - Requirements: Accessible, Parking Lot



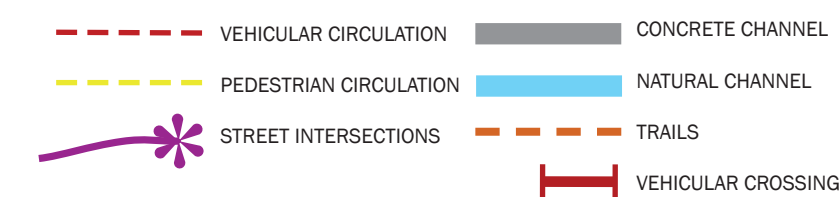
GREEN FLOOD CONTROL & HABITAT

- **Green Flood Control:** Primarily Hardscape
 - Reduce hardscape in channel; provide flood control with bioengineering techniques:
 - vegetate banks
 - widen channel
 - increase flow capacity
 - slow flow velocity
 - Opportunity to create a multi-functional waterway
- **Habitat:** Lacks Suitable Habitat for Riparian Species
 - Wildlife connectivity corridor for birds
 - No suitable nesting or migrating opportunities
 - Primary stop-over location for migrating birds: water, shelter, food source, protection from predators
 - Opportunity to re-establish riparian habitat along channel and vacant parcel

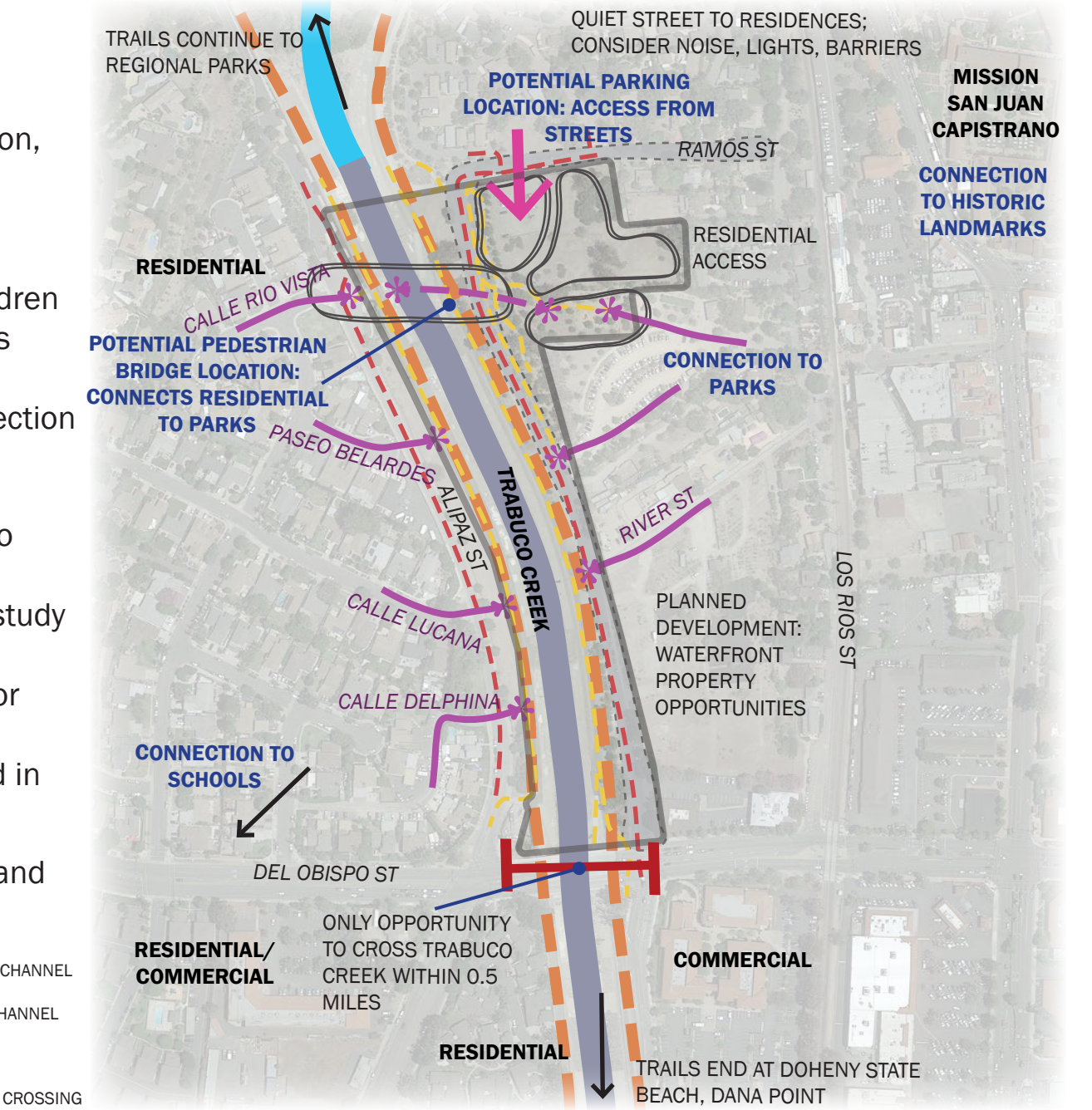
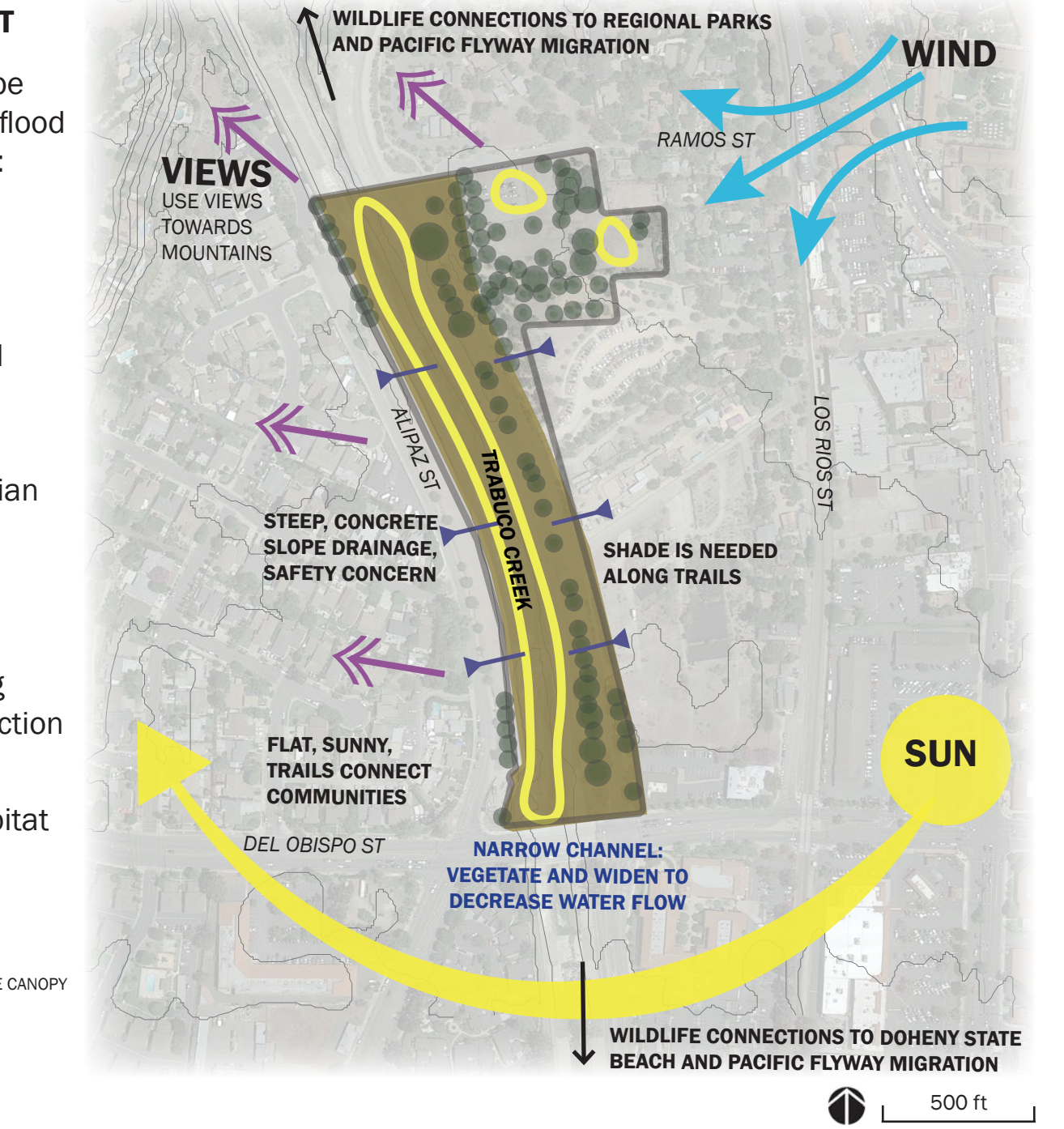


COMMUNITY CONNECTIONS & OUTDOOR EDUCATION

- **Connect Communities:** Linear Circulation, No Accessible Crossover Connection
 - Surrounding residential communities divided by channel
 - Adjacent amenities accommodate children and families; elderly population need is present
 - Opportunity to create accessible connection from residential to amenities
- **Outdoor Education:** In Close Proximity to Schools, No Outdoor Classroom Available
 - Opportunity for schools to gather and study environmental programs
 - Educational gathering space needed for tour groups visiting historical sites; no organized tour gathering space located in urban area
 - Vacant parcel is accessible for school and tour groups to gather

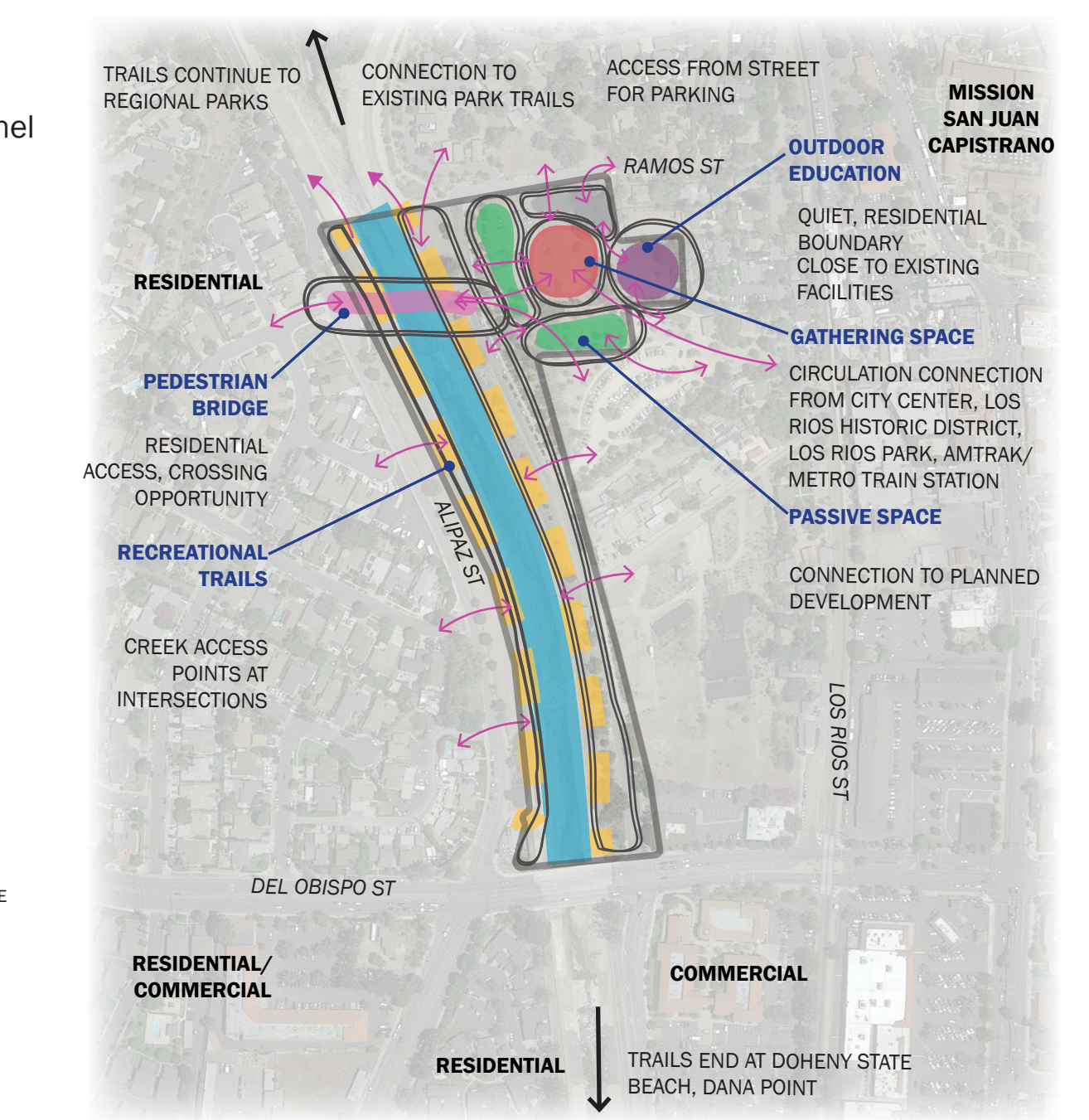
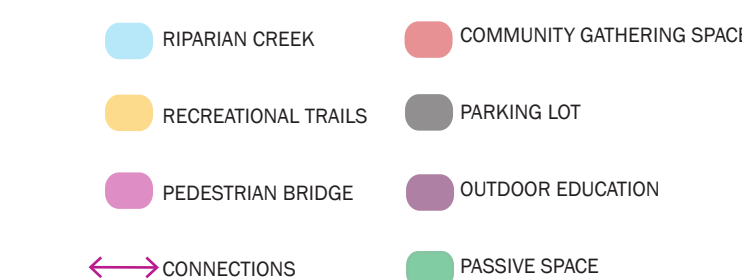


SITE ANALYSIS



SITE PROGRAMMING

- **Green Flood Control:**
 - Increase vegetation, naturalize channel
- **Habitat:**
 - Re-establish riparian habitat
- **Connect Communities:**
 - Create crossover connections
- **Outdoor Education:**
 - Provide gathering space



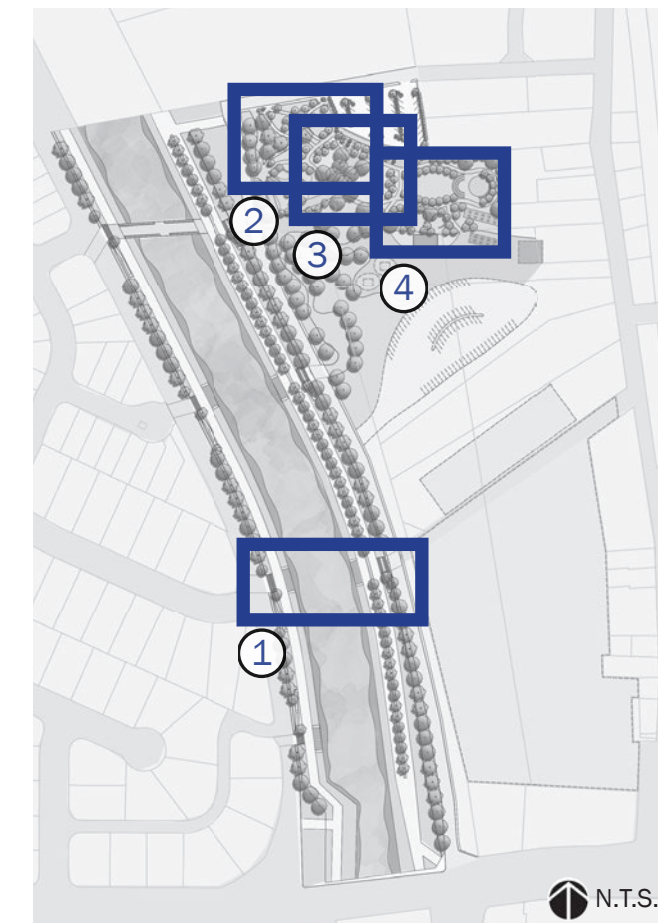
Master Plan



MASTER PLAN NOTES:

- ① Trail Continues to Regional Parks
- ② California Habitat Trails
- ③ Parking
- ④ Drop-Off & Food Truck Parking
- ⑤ Gathering Plaza
- ⑥ Pedestrian Bridge
- ⑦ Confluence of trails
- ⑧ Passive Turf Space
- ⑨ Educational Amphitheater & Seating
- ⑩ Educational Nature Center
- ⑪ Relocated Existing Play Structures
- ⑫ Existing Facilities
- ⑬ Existing Parking
- ⑭ Existing Petting Zoo
- ⑮ Recreational Trail
- ⑯ Widened, Vegetated Channel
- ⑰ Viewing Path & Recreational Trail
- ⑱ Access to Water Stairs
- ⑲ Pedestrian Access
- ⑳ New Planned Development
- ㉑ Trails End at Doheny State Beach

4 ENLARGEMENT AREAS



As seen in the Concept Section, the Master Plan widened the creek's edges to increase the channel's flood capacity. The bike paths were lowered off of the road for safety, closer access to the creek, as well as creating a larger flood capacity volume within the channel. However, the trails would not be accessible in the event of a 100-year flood. A secondary stormwater control measure added to the design includes box culverts stored under the bike paths in order to accommodate additional flooding if needed. The creek banks were vegetated to increase habitat, reduce hardscape, and provide slope stabilization.

In addition, the east bike path was widened to accommodate additional users and provides seating and closer access to the creek. The paths are shaded with tree canopy, including a planted median between the bike and viewing path.

The new park is spatially organized into different program areas, however the stream-like pathways connect the several different areas. The gathering space is located in the center of the new park where visitors entering from all edges of the park have equal access to a new gathering plaza. The outdoor education area is located in a quiet area close to residential and the existing facilities within Los Rios Park. The passive space elements are located in a closed, shaded area for small group gatherings. And the parking is arranged to allow for a drop-off loop and has multiple entrances along Ramos St.

In addition, the design has connections to the existing adjacent features, including multiple entrances to the Los Rios Park and Los Rios Historic District, multiple access points between the recreational trails and residences located where streets end perpendicular to the creek's edge, and the new planned development space has new waterfront property and has primary access to the trails that increases opportunities for users to visit the new planned development using the new bike path.

EXISTING SITE



① **Trabuco Creek** concrete channel and bike path facing north. No vegetation or suitable habitat.

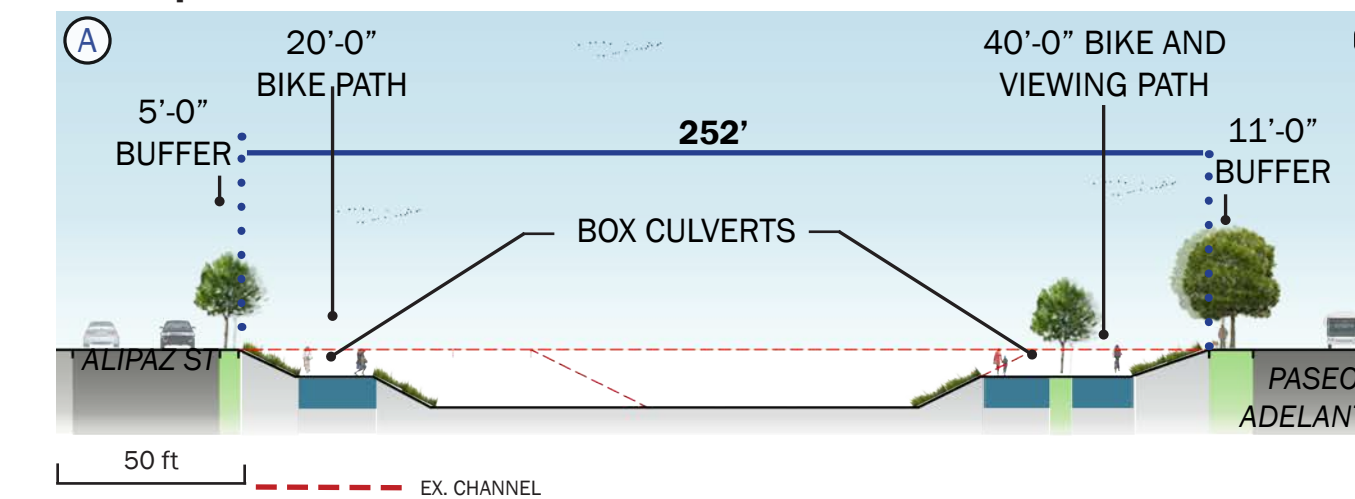


② **Trabuco Creek** facing west. Potential to naturalize steep banks and create access to creek.



③ Buffer between **Trabuco Creek** bike path and Paseo Adelanto facing north. Potential to widen channel and provide suitable habitat.

Concept Section



Overview Perspective

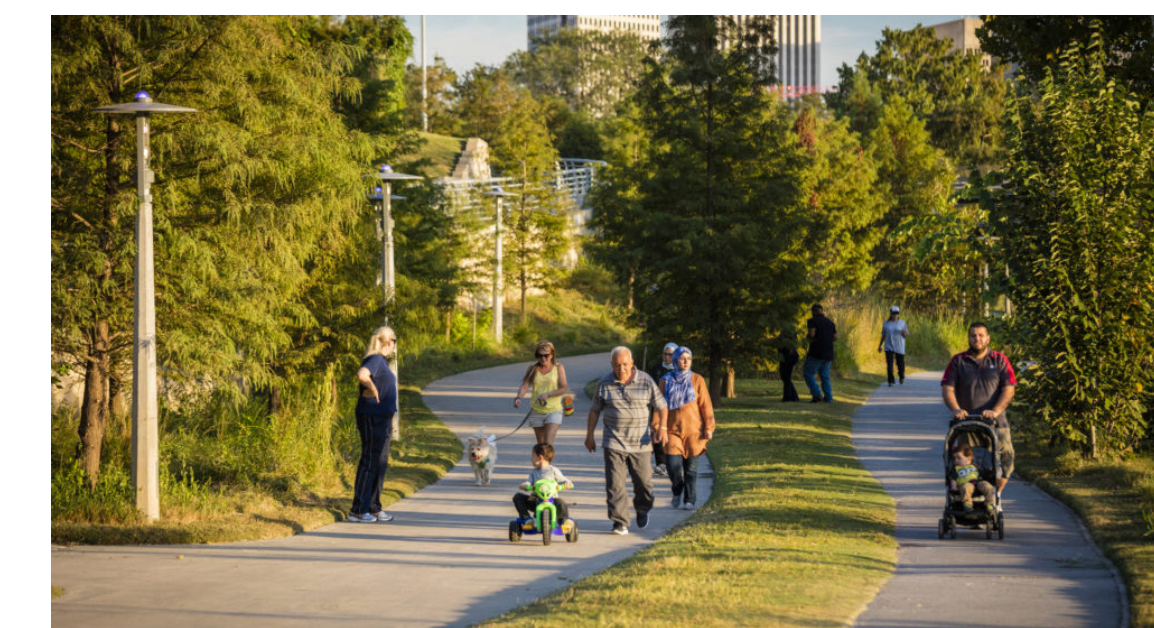


METHODS



WETLAND RESTORATION | USACE Bioengineering Techniques

Bioengineering is the combination of biological, mechanical, and ecological concepts to **control erosion** and **stabilize soil** through the use of **vegetation** or a combination of it and construction materials



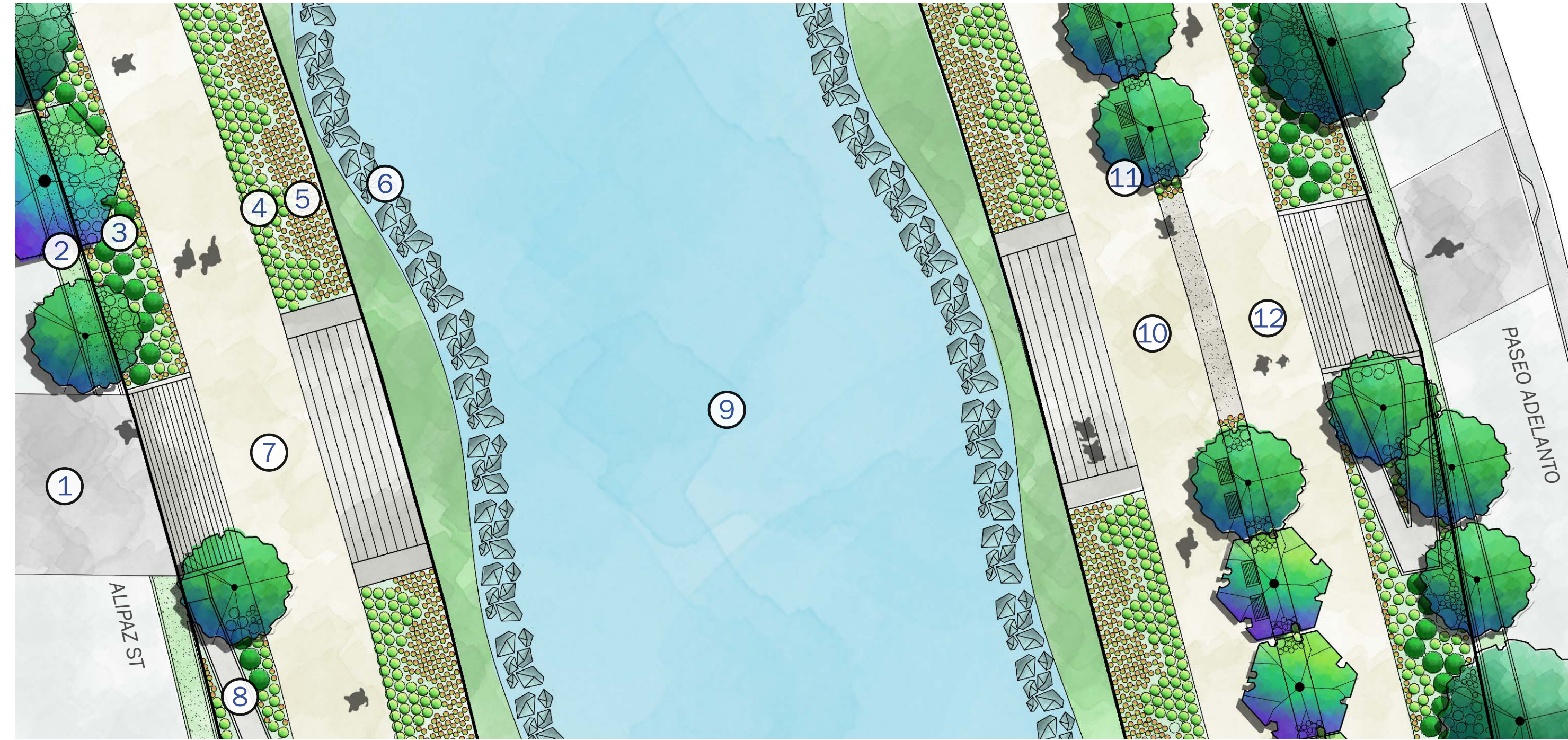
OPEN SPACE PARK | A PATTERN LANGUAGE GUIDELINES

Access to Water

- Promenade
- Countryside (Stewardship)
- Parallel Roads
- Small Parking Lots
- Public Space

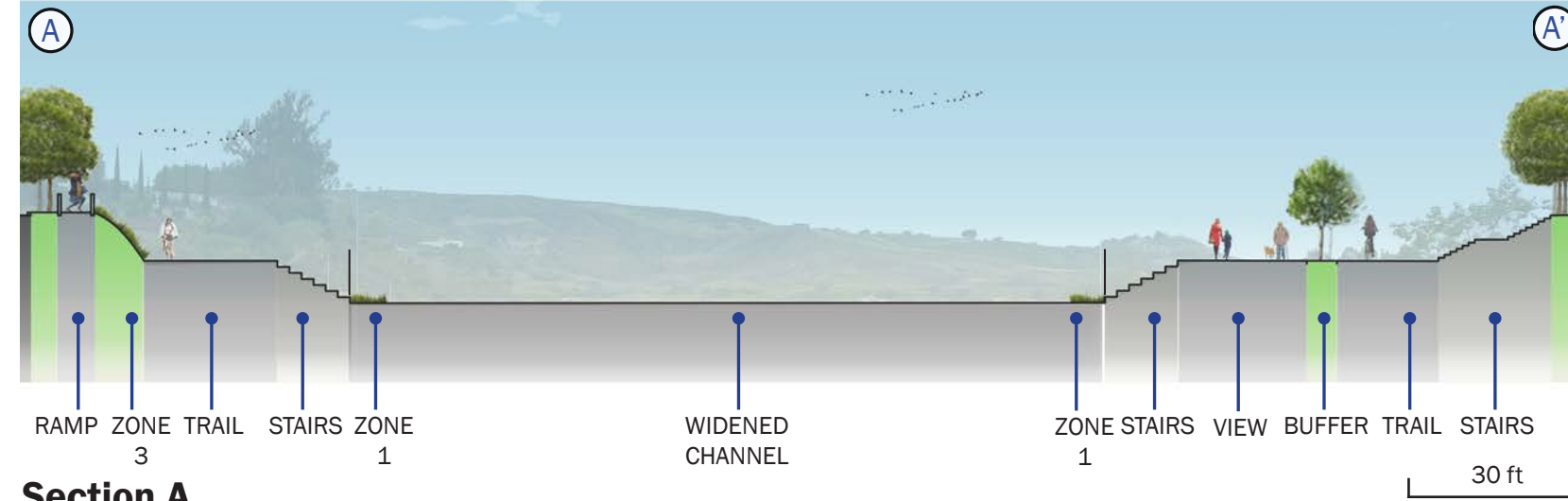
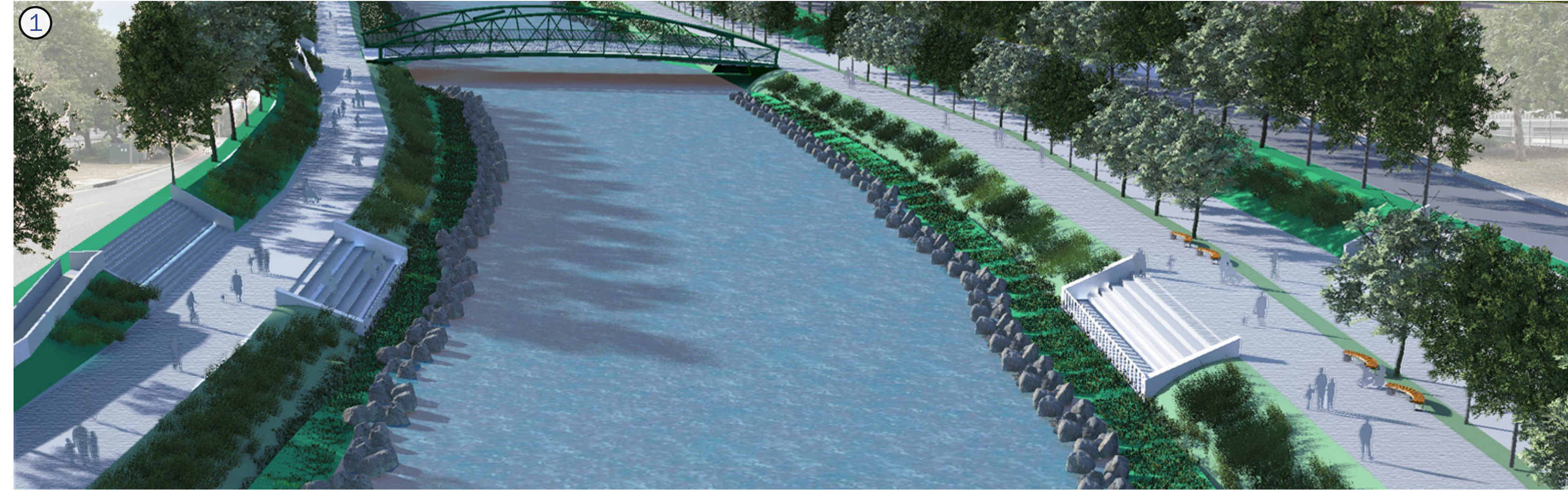
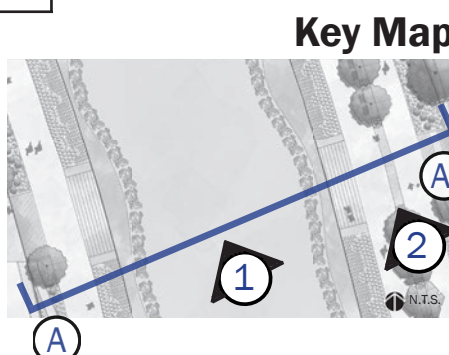
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Riparian Creek



- Enlargement 1**
- ① Pedestrian Crosswalk
 - ② Riparian Zone 3: Woodland
 - ③ Riparian Zone 3: Herbs, shrubs, grasses
 - ④ Riparian Zone 2: Herbs, woody plants
 - ⑤ Riparian Zone 1: Herbs emergent aquatic plants
 - ⑥ Rip Rap Stabilization
 - ⑦ Recreational Trail
 - ⑧ Pedestrian Access Ramp
 - ⑨ Widened, Vegetated Channel
 - ⑩ Viewing Path
 - ⑪ Seating
 - ⑫ Recreational Trail

The riparian creek increases diversity of plants, provides habitat for wildlife, and allows for more community uses than the concrete flood channel provided. The vegetated trails reduce the original hardscape and improve water quality by intercepting runoff. The tree canopy creates a shaded, climate-cooling path. Visitors are able to enjoy the scenic, natural environment in an urban setting.



Section A
The Riparian Creek enlargement illustrates the new access points, widened path, and vegetated banks. Visitors can access the recreational trails via the new crosswalks added where existing streets ended perpendicular to the creek's edge. There is both stair and ramp access to the recreational trails from the street level. The trails were widened, shade was increased, and benches were designed to accommodate more visitors and uses. The creek banks are vegetated in a striation from the water's edge in a series of planting zones. The riparian planting zones are based on elevation from the creek and the plant's ability to tolerate frequencies and durations

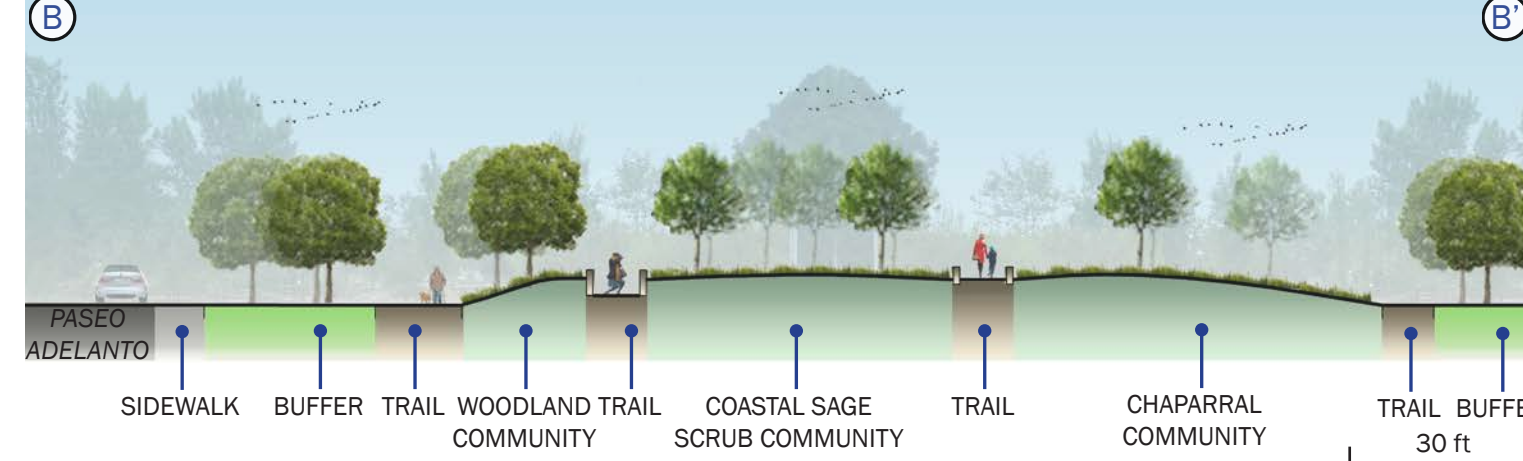
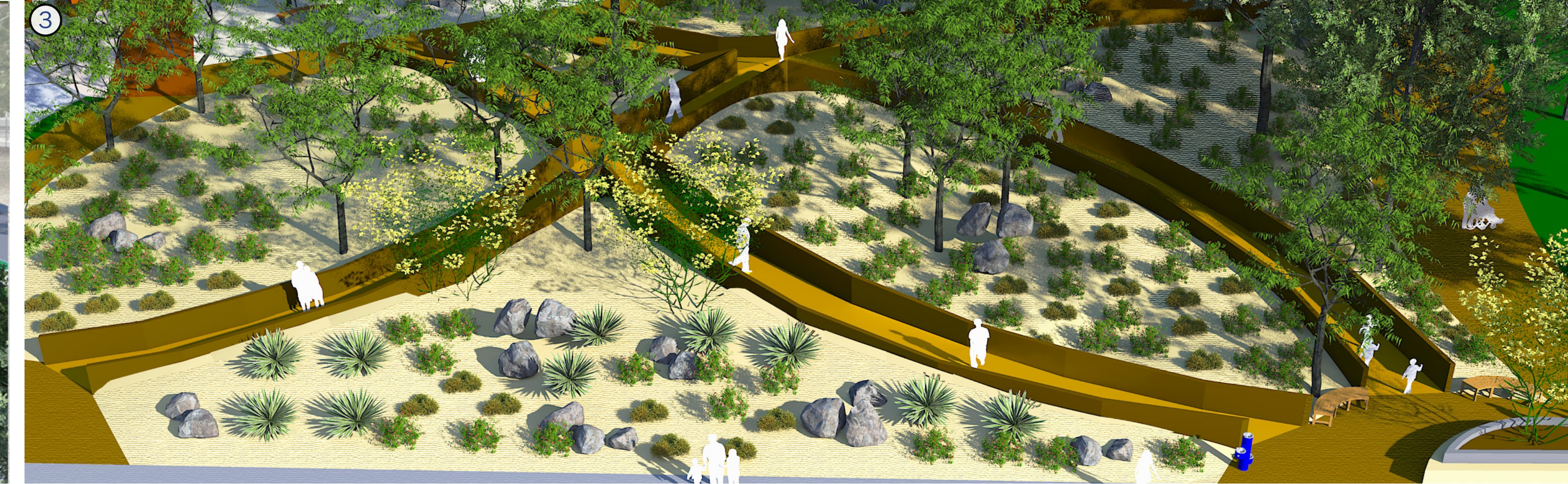
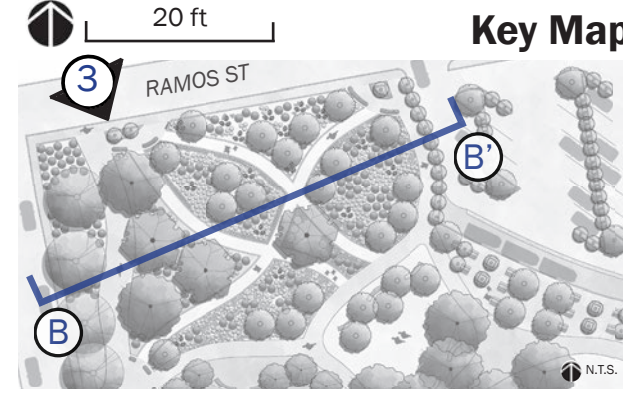
of flooding, with plants that can tolerate high stress at the bottom. Plants in the Terrace Zone at the top include trees with deep roots that can hold the bank together and withstand overbank flooding. Vegetating the creek banks slows the water velocity and reduces risk of flooding. The planting extends along the creek's bottom in a natural flowing pattern to naturalize the creek. The bottom of the slope is stabilized with riprap, in accordance with the USACE bioengineering guidelines. The additional stairs from the trails leading to the creek bottom have a longer rise and run for convenient seating for enjoyment along the creek's edge.

California Habitat Trails



- Enlargement 2**
- ① Existing Trail
 - ② Desert Riparian Woodland Community
 - ③ Coastal Sage Scrub Community
 - ④ Desert Community
 - ⑤ Passive Trails
 - ⑥ Mediterranean Community
 - ⑦ Grassland Community
 - ⑧ Chaparral Community
 - ⑨ Passive Turf Space
 - ⑩ Gathering Plaza
 - ⑪ Picnic Table Seating
 - ⑫ Drop-Off & Food Truck Parking
 - ⑬ Parking Lot

The 6 different vegetation communities represent the diversity of California plant communities, and creates an educational opportunity, by increasing biodiversity and potential wildlife occurrences. Additionally, the pathways provide a shaded walking path for exploration and reflection. The plant palette for each habitat zone shows the uniqueness of each California community.



Section B
The California Habitat Trails enlargement illustrates 6 different California vegetation communities with mounded terrain and trails. The habitat zones demonstrate the diverse landscapes in California. The trails allow for individual or group exploration, or quiet, shaded stroll through the park. The diversity of communities can be used as an educational opportunity to show the

different plant types and arrangements in each community. The trails are lined with retaining wall to support the mounded terrain, and also is used as a seating wall for close interaction with each zone. The zones also provide habitat and protection for wildlife. Additionally, informational and interpretive signs would be located in this area as part of the educational component.

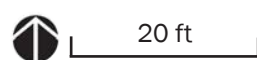
CALIFORNIA COMMUNITIES

Community Gathering Spaces

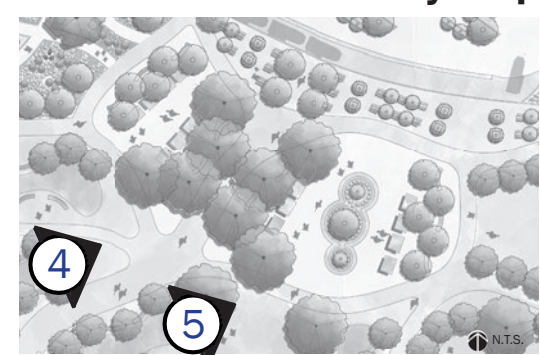


- Enlargement 3**
- ① California Habitat Trails
 - ② Food Truck & Picnic Table Seating
 - ③ Parking Lot
 - ④ Mounded Lawn
 - ⑤ Primary Pathway
 - ⑥ Passive Turf Space
 - ⑦ Temporary Tent Fair Exhibit
 - ⑧ Central Planter Seating Area
 - ⑨ Gathering Plaza
 - ⑩ Amphitheater Expanded Viewing Area

The Community Gathering Spaces provide open, flexible uses for the community to gather and use for various activities or events. The plaza serves as a central space for groups to gather when visiting the Los Rios Park or Los Rios Historic District, as well as a meeting place for visitors traveling along the bike trails. These spaces provide a destination to an area that was previously not maintained, well-organized, nor welcoming.



Key Map



Educational Spaces

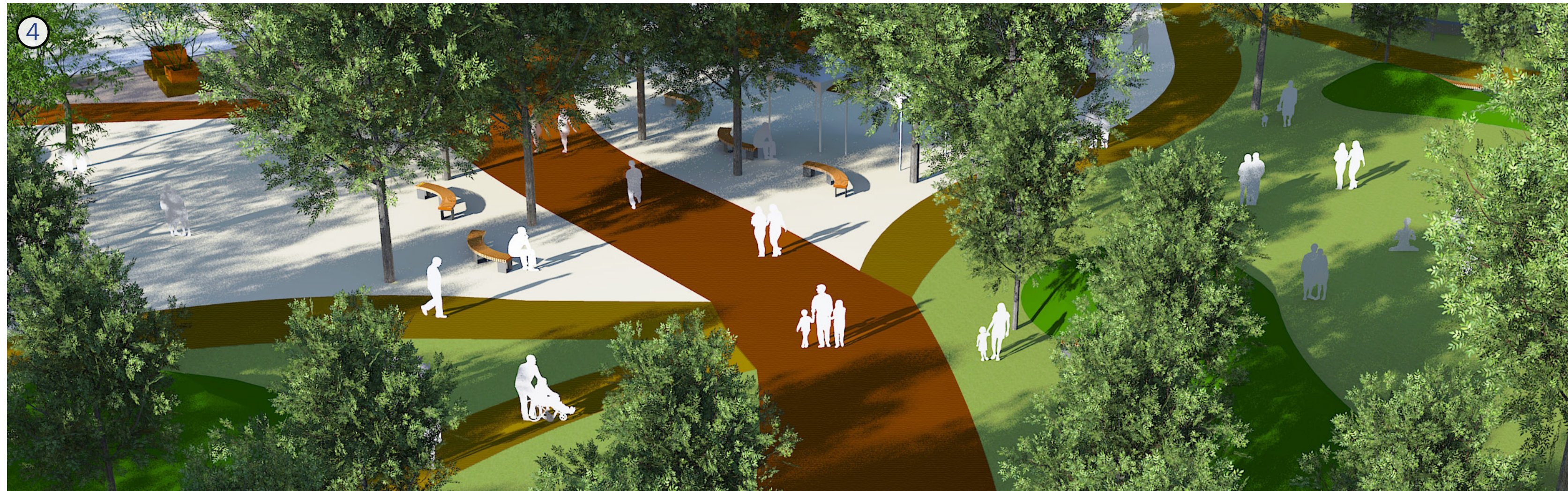
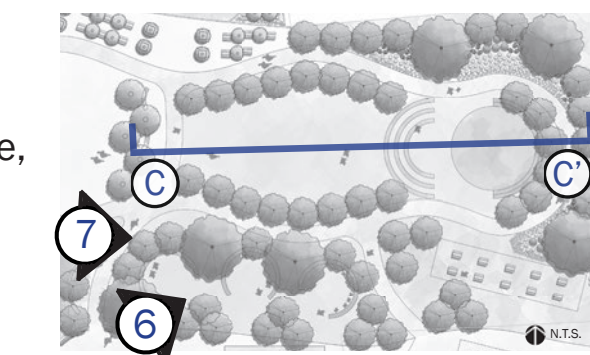


- Enlargement 4**
- ① Entry Seating
 - ② Passive Turf Space
 - ③ Gathering Plaza
 - ④ Picnic Table Seating
 - ⑤ Mounded Lawn
 - ⑥ Amphitheater
 - ⑦ Outdoor Classrooms
 - ⑧ Nature Center
 - ⑨ Shaded Picnic Tables
 - ⑩ Existing Shaded Picnic Tables
 - ⑪ Existing Residential

The Educational Spaces provide areas for flexible use for groups, including school groups as well as for tour groups visiting nearby historical landmarks. The spaces also can host City festivals, events, or productions using the stage and open lawn area. The location allows students to gather in a quiet space, and is in short walking distance to the restored creek and California Habitat Trails zones that provide educational opportunities for students to learn about biodiversity, ecology, among other sciences. In addition, the classrooms are close to existing play structures within Los Rios Park and lawn for recreational opportunities.



Key Map



GATHERING PLAZA



The Gathering Plaza is located at the center of the new park, and links the several programming elements within the project site. The stream-like pathways flow into the plaza, with the widest, primary circulation pathway connecting the northeast corner in the parking lot to the southwest corner that directs visitors to the pedestrian bridge over the creek. The plaza serves as a community gathering space for open, flexible use. Possible uses include temporary tent fair exhibits, such as for art fairs or farmers markets.

FOOD TRUCKS

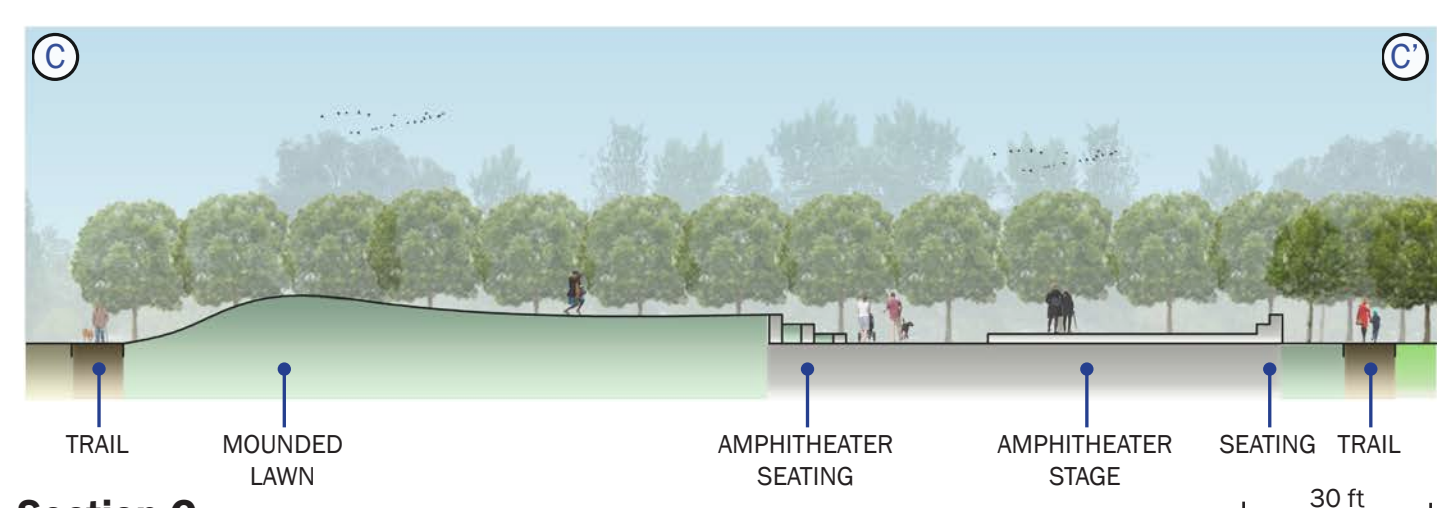


North of the plaza is the food truck and picnic table seating area. There is a drop-off and food truck parking lane connected to the parking lot that allows a one way flow of traffic with a gravel median for trucks to drive over when necessary. The picnic tables allow for flexible community use, such as chess in the park, or rental opportunities. The area is shaded with trees and allows for flexible use.

EXERCISE GROUPS



South of the plaza are turf areas for passive use, such as picnicking or outdoor exercise group gatherings. The softscape allows for open, socially-distant groups to gather in fresh air. The community can organize park events to take place in this space as well as families can take advantage of the shaded area for quiet day spent in the park. The turf area is enclosed by groupings of trees and mounded terrain for quiet spaces in the park.



Section C

The Educational Spaces are located in the southeast corner of the new park. Large groups have the opportunity to use the amphitheater and extended viewing mounded lawn. Trees are the natural backdrop to the stage as well as defining the space on the perimeter, creating a visual and noise barrier. Smaller groups can take advantage of the individual outdoor

classroom seating areas for hands-on and social-distant learning. The small classrooms are shaded, and in close proximity to existing facilities and can work in collaboration with the new Nature Center Building for school field trips. Additionally, educational interpretive signs would be located within these spaces as part of the educational component.