



**SAN
PEDRO
CREEK
CULTURE PARK**



SAN ANTONIO
RIVER AUTHORITY
Leaders in Watershed Solutions



CULTURE PARK

mũñoz



OUR MISSION IS TO CREATE A WORLD CLASS
LINEAR PARK THAT REPRESENTS THE CULTURAL
IDENTITY OF OUR COMMUNITY AND INSPIRES
THE PEOPLE OF BEXAR COUNTY.



DESIGN GOALS

MAXIMIZE ECONOMIC BENEFITS OF THE PROJECT.

CREATE A WORLD CLASS EXPERIENCE FOR RESIDENTS AND VISITORS.

ELEVATE AND EDUCATE OUR COMMUNITY PROFILE IN SUSTAINABILITY.

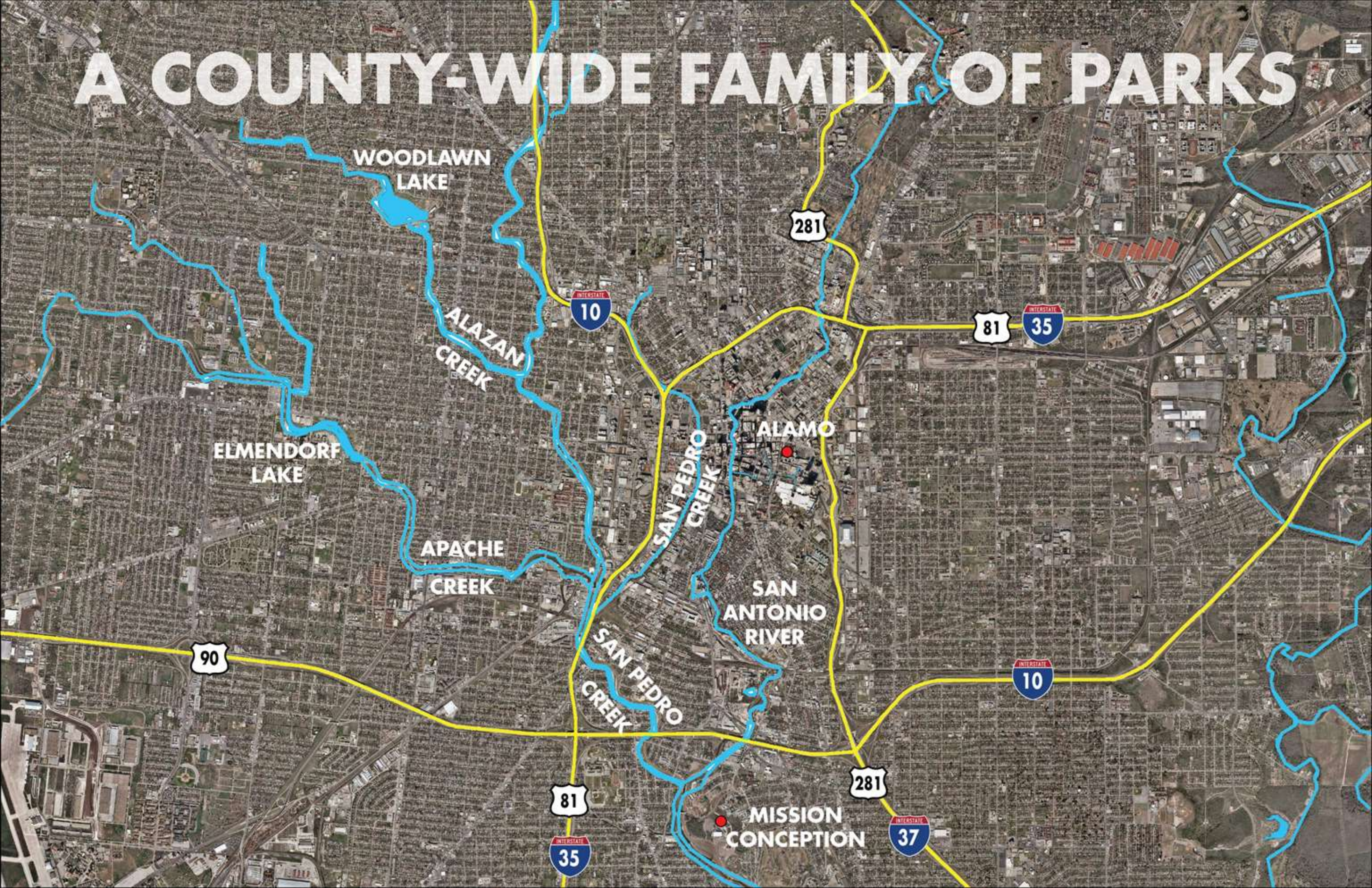
ENGAGE OUR COMMUNITY IN A GRASS-ROOTS DESIGN EFFORT.

REFLECT THE UNIQUE CULTURE OF BEXAR COUNTY.

RECONNECT THE WESTSIDE WITH DOWNTOWN.



A COUNTY-WIDE FAMILY OF PARKS



WOODLAWN
LAKE

ALAZAN
CREEK

ELMENDORF
LAKE

APACHE
CREEK

SAN PEDRO
CREEK

SAN ANTONIO
RIVER

SAN PEDRO
CREEK

MISSION
CONCEPTION

281

10

81

35

90

10

81

35

281

37



OUR COMMUNITY VOICE

SAN PEDRO CREEK PUBLIC WORKSHOP, 08/23/2014





**WE HAVE ENGAGED
WORLD-CLASS THINKERS**

A COMMUNITY LECTURE

ROBERT
HAMMOND



ROBERT HAMMOND

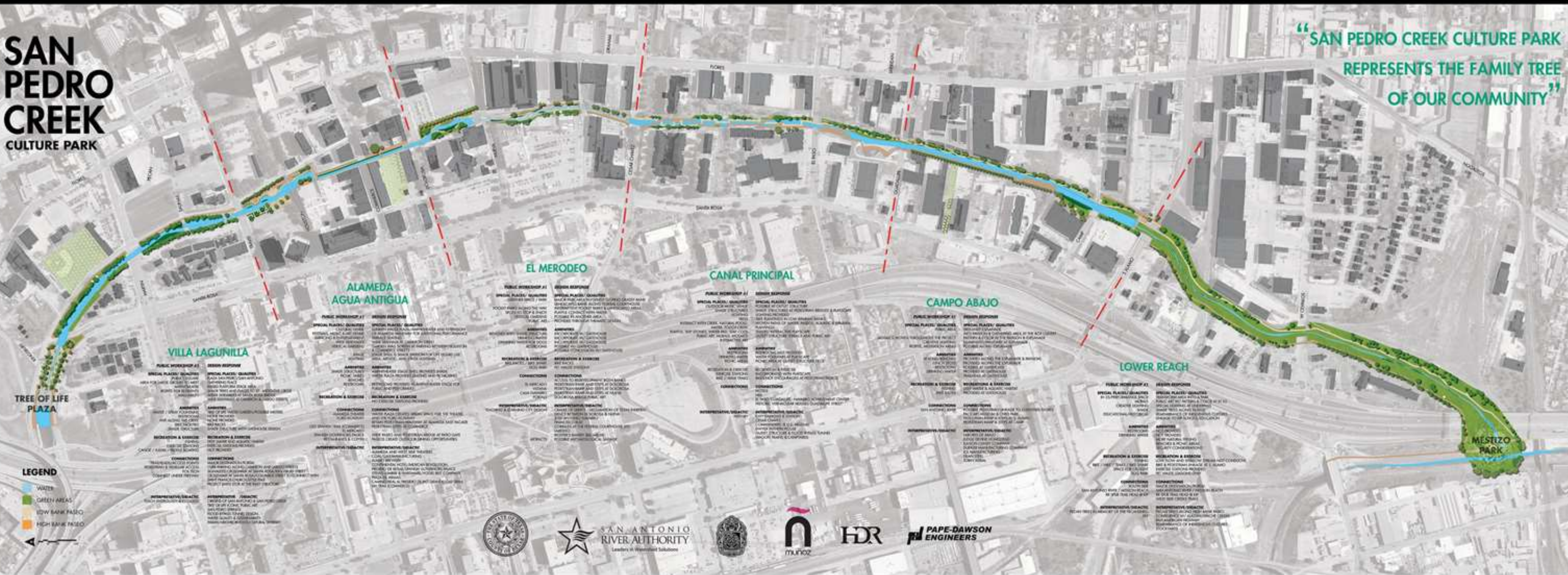
Robert Hammond, a native San Antonian and co-founder of Friends of the Highline, the non-profit group responsible for The High Line Park in New York City. The High Line was built in 1934 as an elevated rail line for freight trains and abandoned in 1980. Friends of the Highline successfully saved the structure from being destroyed and repurposed it into a public park, now one of New York City's premiere destinations.



**REIMAGINE
INFRASTRUCTURE**

SAN PEDRO CREEK CULTURE PARK

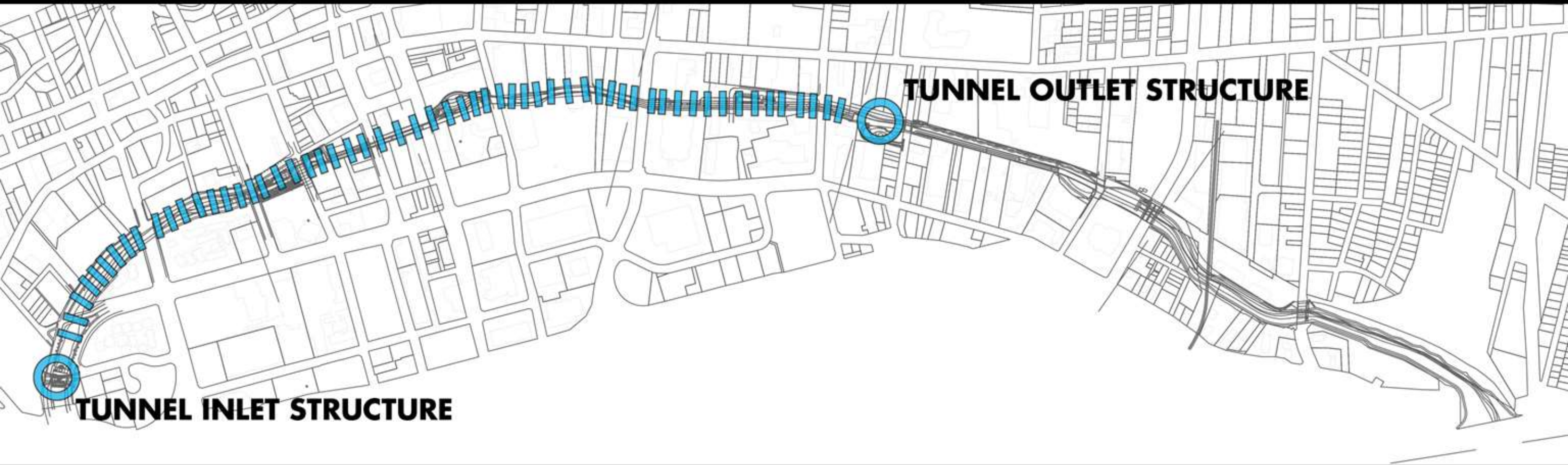
“SAN PEDRO CREEK CULTURE PARK REPRESENTS THE FAMILY TREE OF OUR COMMUNITY”



LEGEND

- WATER
- GREEN AREAS
- LOW BANK PASTO
- HIGH BANK PASTO

FLOOD BYPASS TUNNEL



1.1 MILES IN LENGTH • 24 FEET IN DIAMETER • 150 FEET UNDERGROUND

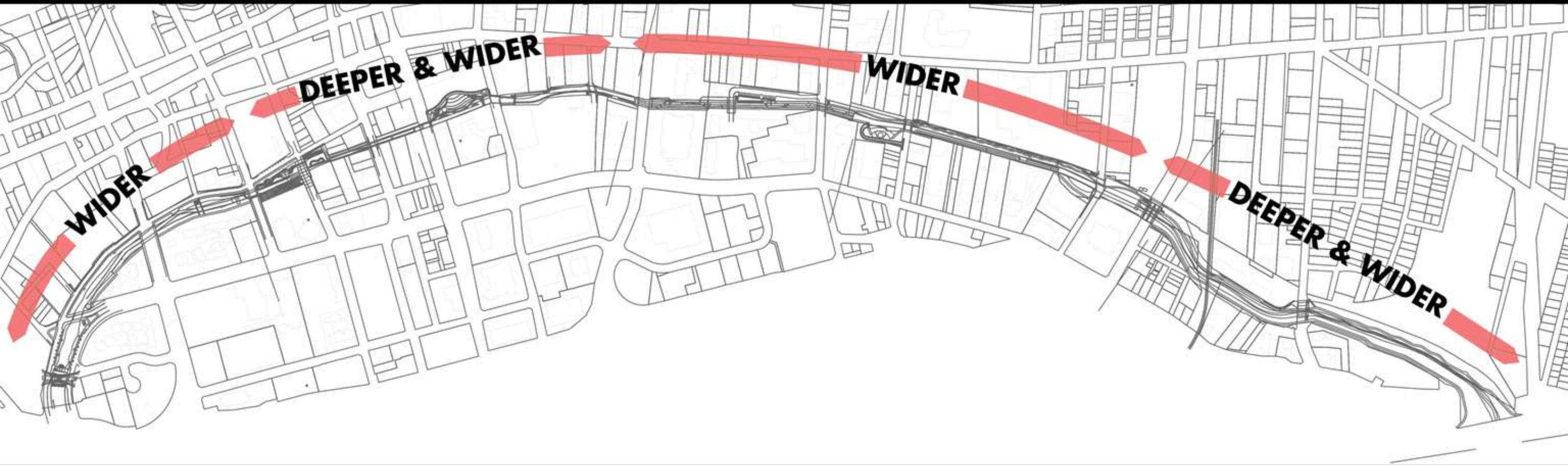
LOCAL DRAINAGE AREA

An aerial photograph of a city, likely San Pedro, California. A blue outline highlights a specific area in the center of the city, which is identified as a local drainage area. The area is densely packed with buildings and streets. The text 'LOCAL DRAINAGE AREA' is at the top, '44 ACRES' is in the middle, and 'SAN PEDRO CREEK IS NOT THE SAME AS THE PASEO DEL RIO.' is at the bottom.

44 ACRES

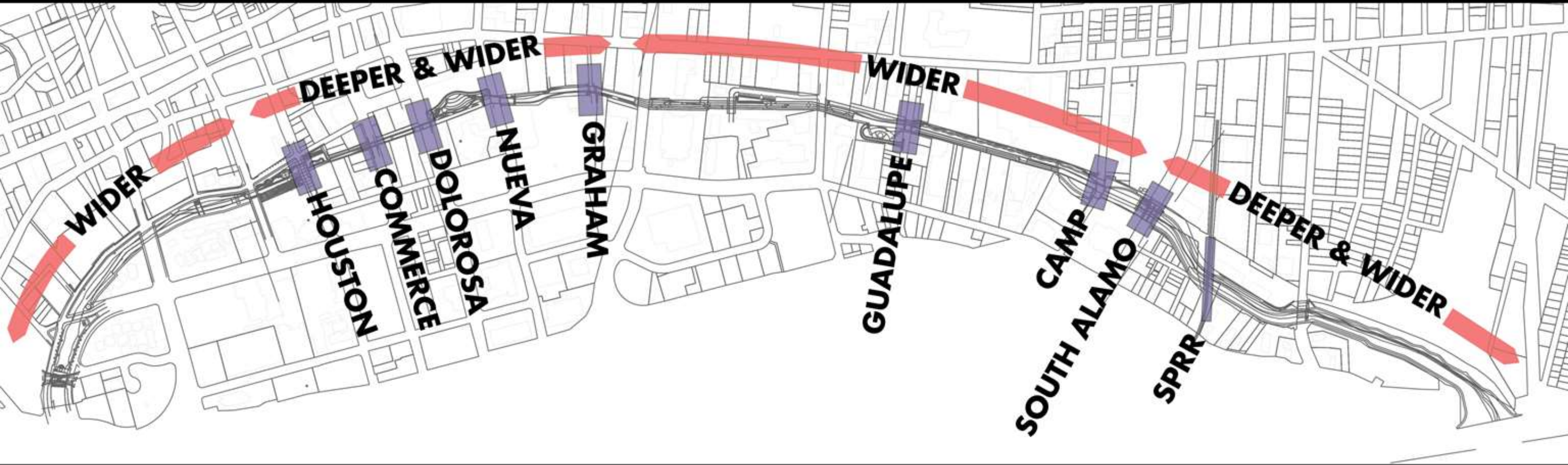
SAN PEDRO CREEK IS NOT THE SAME AS THE PASEO DEL RIO.

INCREASE CHANNEL CAPACITY



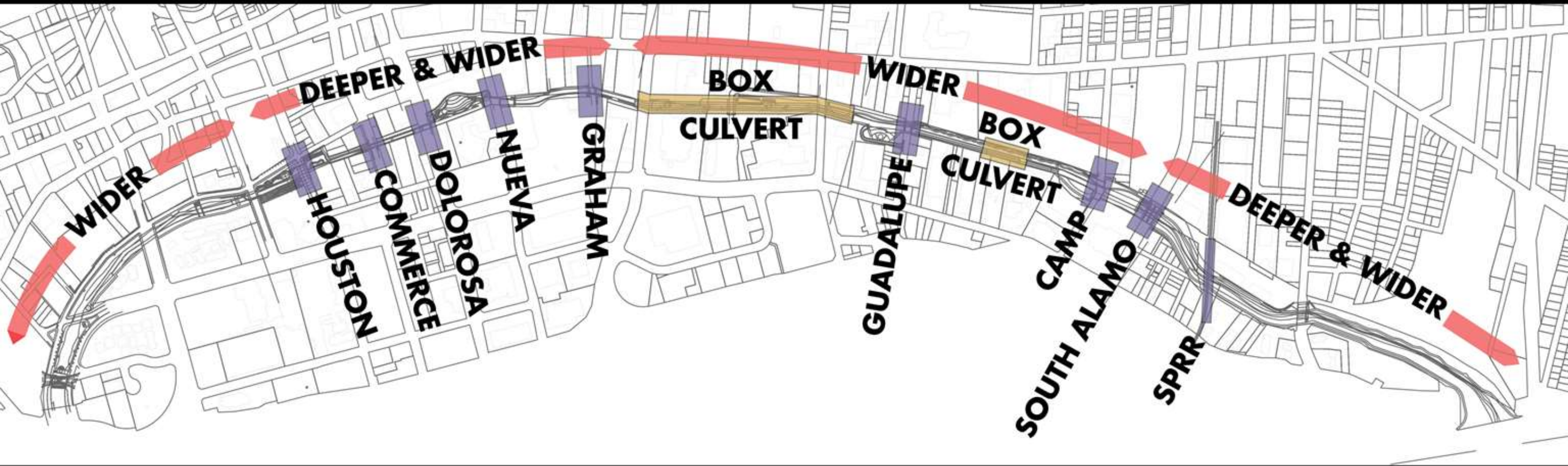
WIDEN AND/OR DEEPEN EXISTING CHANNEL

REPLACE CONSTRAINING BRIDGES



8 NEW STREET BRIDGES • 1 NEW RAILROAD BRIDGE

OPEN THE BOX CULVERTS

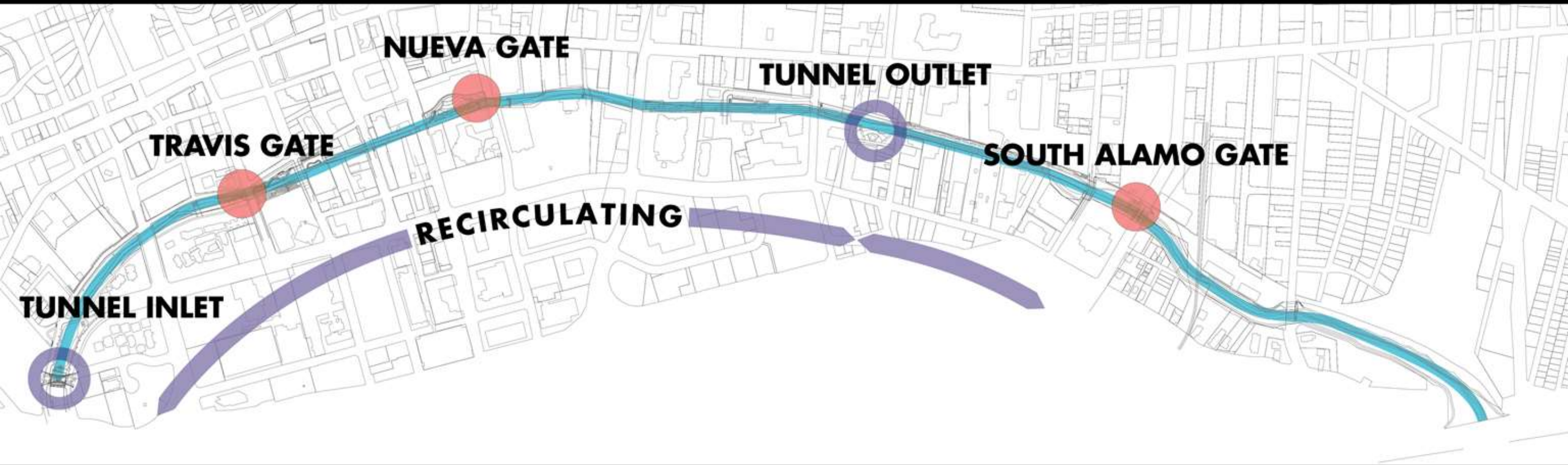


WATER CONDITION



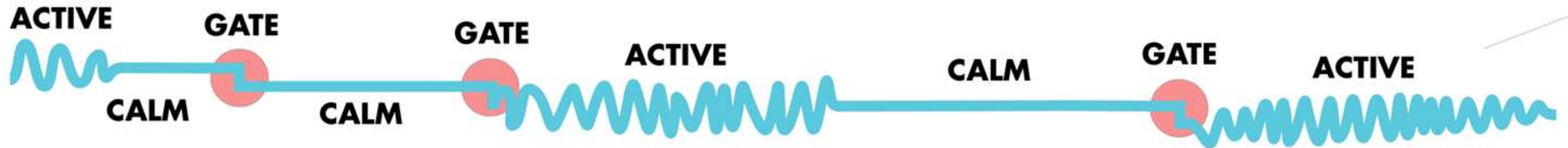
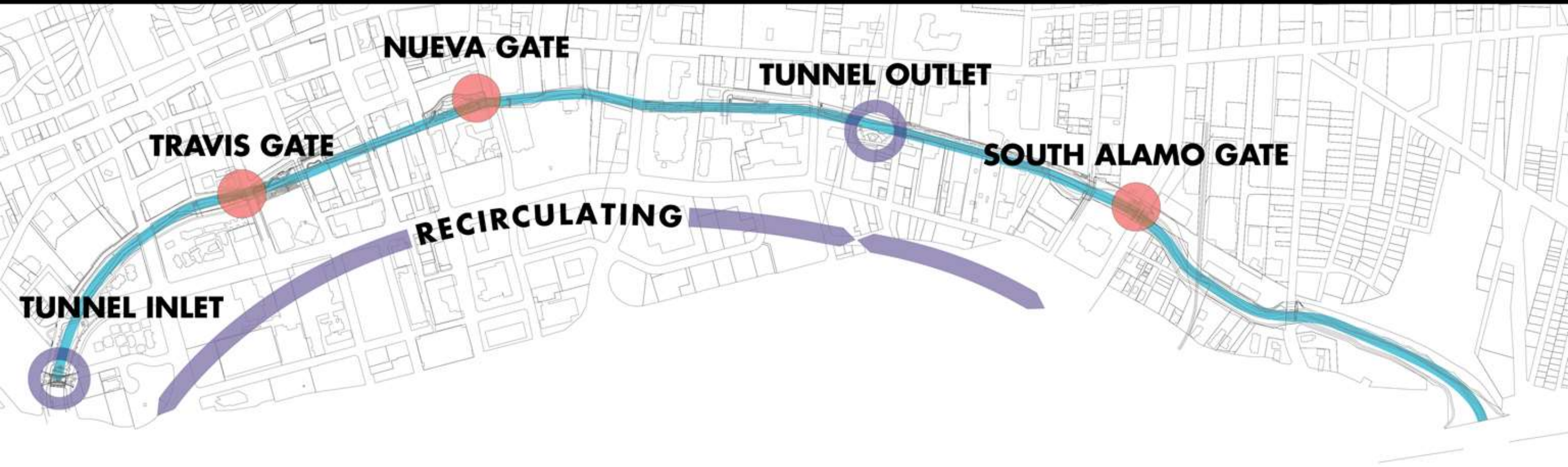
ENGINEERED FLOW 3 CREST GATES, 3 IMPOUNDMENTS

WATER QUALITY



RECIRCULATION

WATER CHARACTER



PROMOTE SUSTAINABILITY



GREEN LINEAR PARK

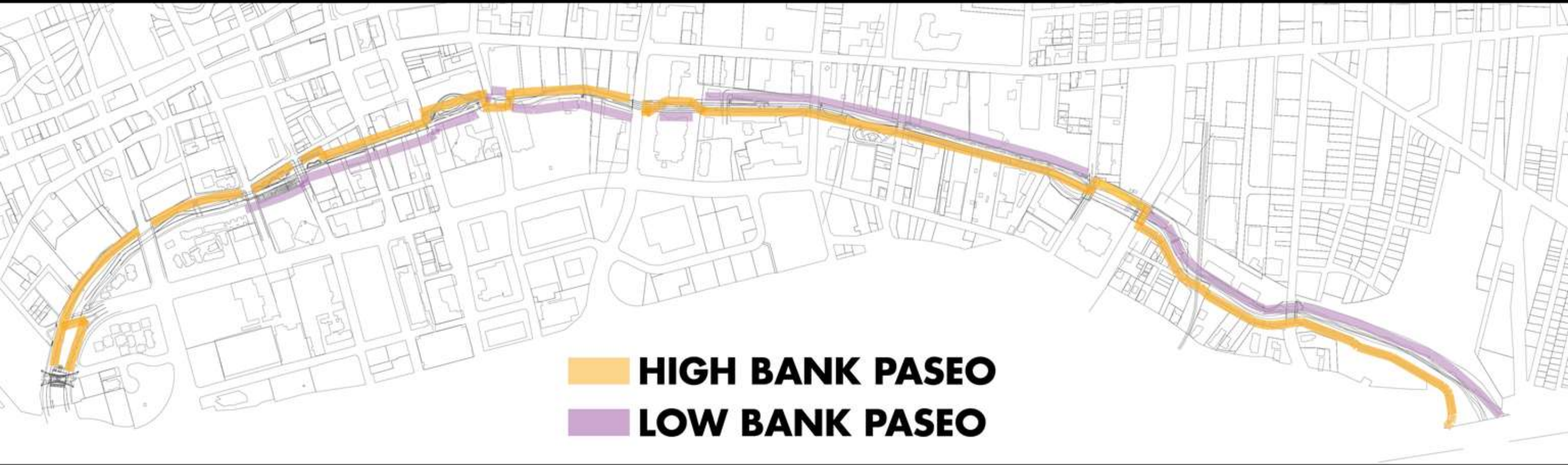


URBAN GREEN SPACE • AQUATIC & RIPARIAN HABITAT • TREES & PLANTS

ENGAGE COMMUNITY



INTERWOVEN PASEOS



HIGH BANK PASEO
LOW BANK PASEO

4 MILES NEW PASEOS

BRIDGING THE DIVIDE



ENCOURAGE FAMILY ACTIVITIES



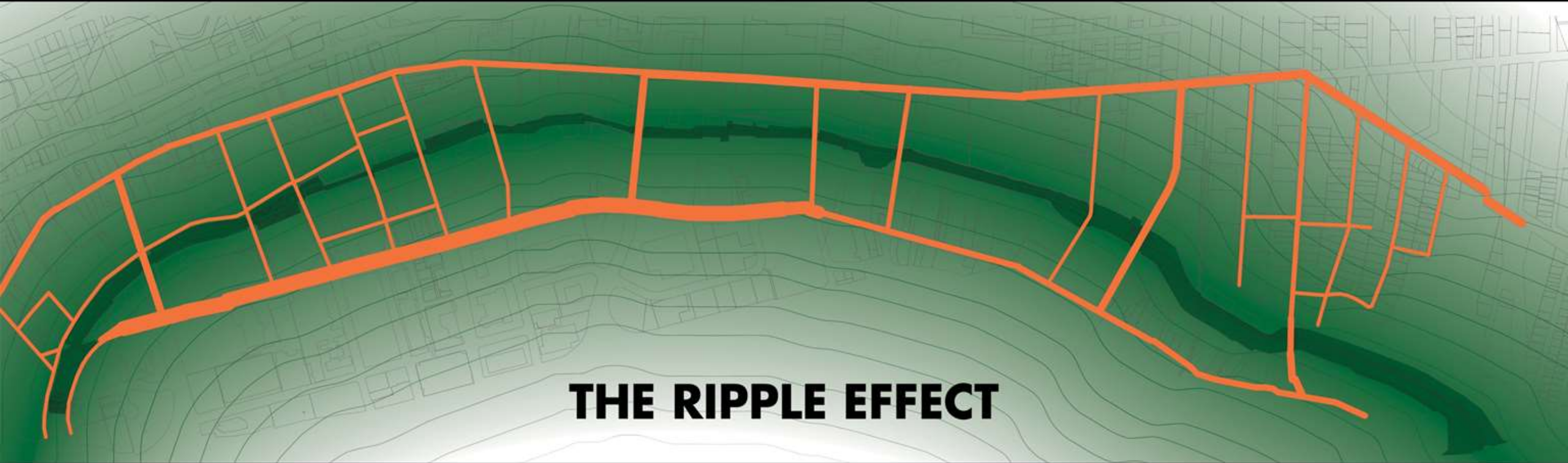
URBAN FRAMEWORK





**CREATE ECONOMIC
DEVELOPMENT**

CAPITALIZE THE VALUE



THE RIPPLE EFFECT

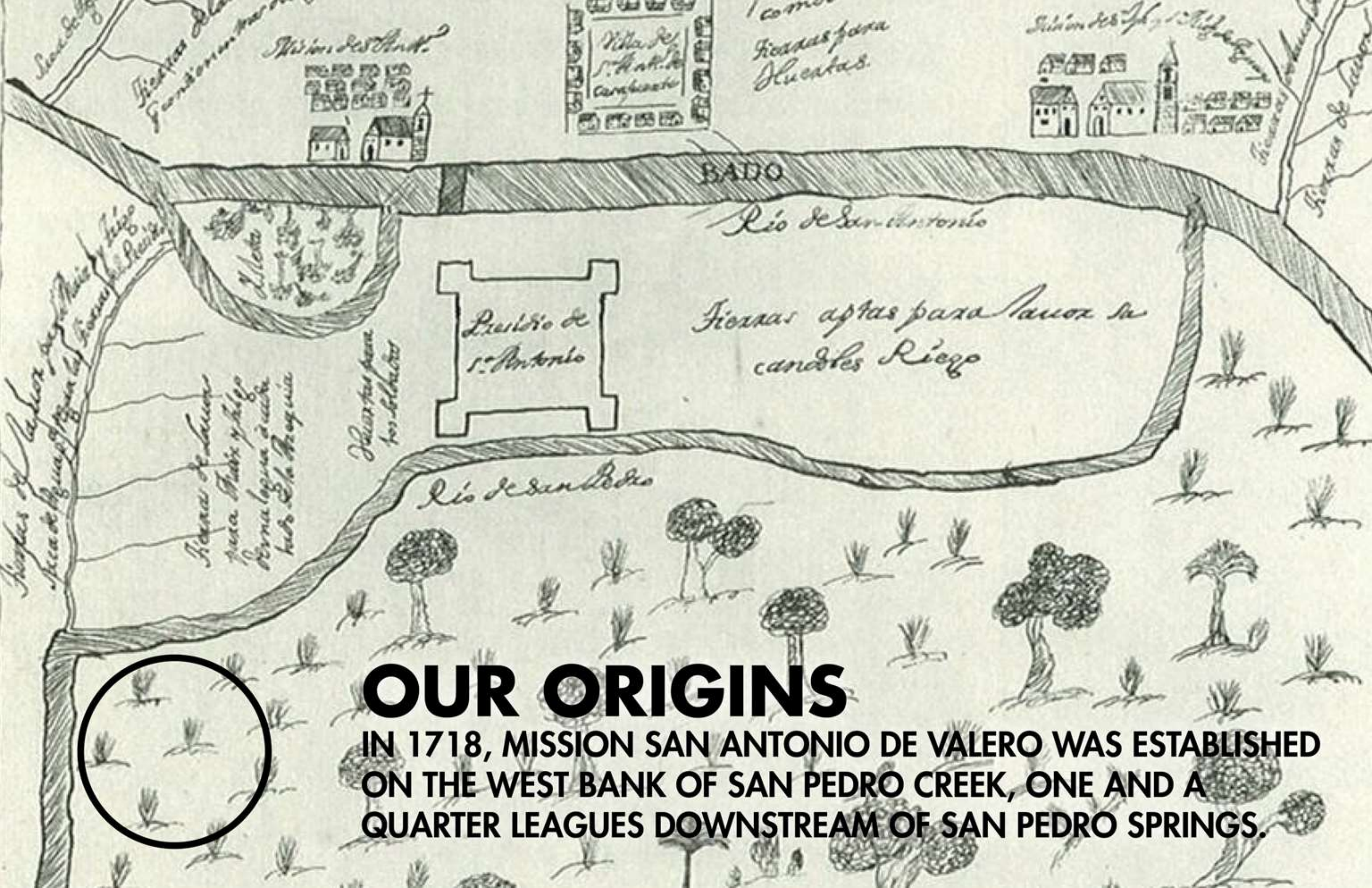
THE RIPPLE EFFECT

PROJECT INPUT \$175,000,000

TOTAL OUTPUT \$895,000,000 - \$1,504,492,000

VILLA LAGUNILLA





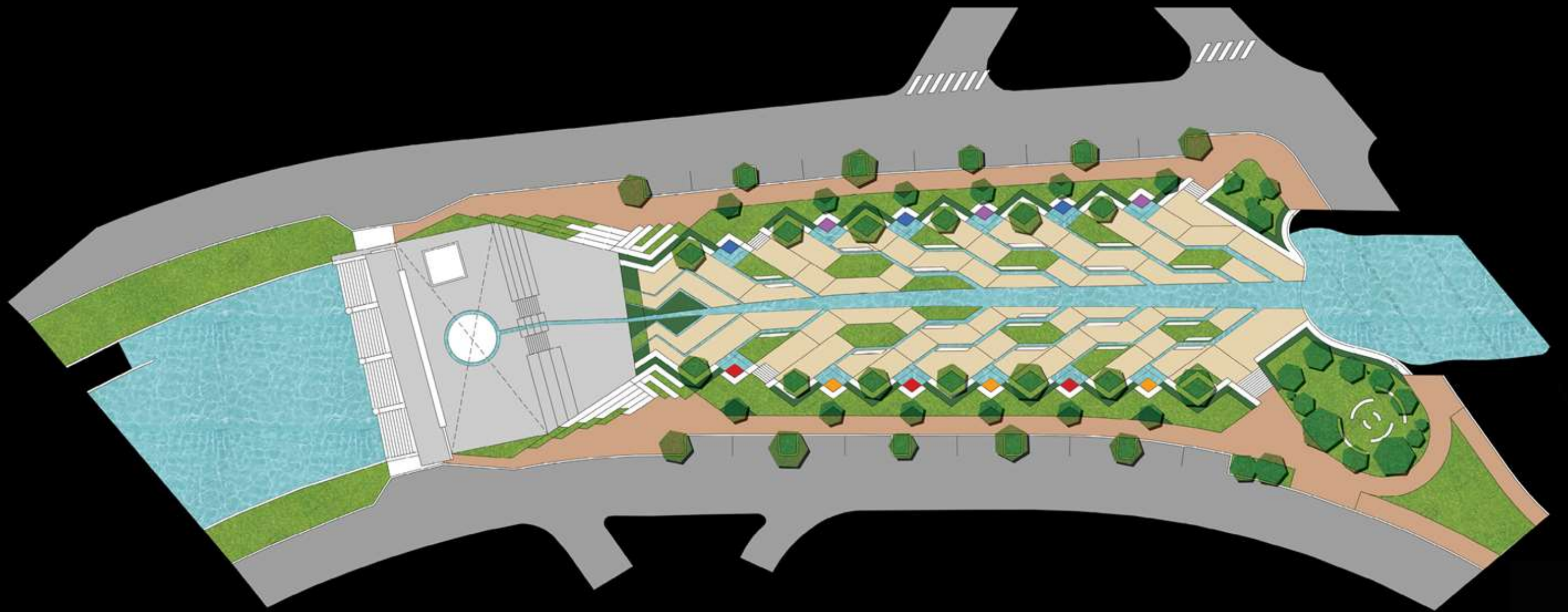
OUR ORIGINS

IN 1718, MISSION SAN ANTONIO DE VALERO WAS ESTABLISHED ON THE WEST BANK OF SAN PEDRO CREEK, ONE AND A QUARTER LEAGUES DOWNSTREAM OF SAN PEDRO SPRINGS.



THE TREE OF LIFE

TREE OF LIFE PLAZA



BIRTH PLACE OF SAN ANTONIO EXPRESSED AS A FAMILY TREE

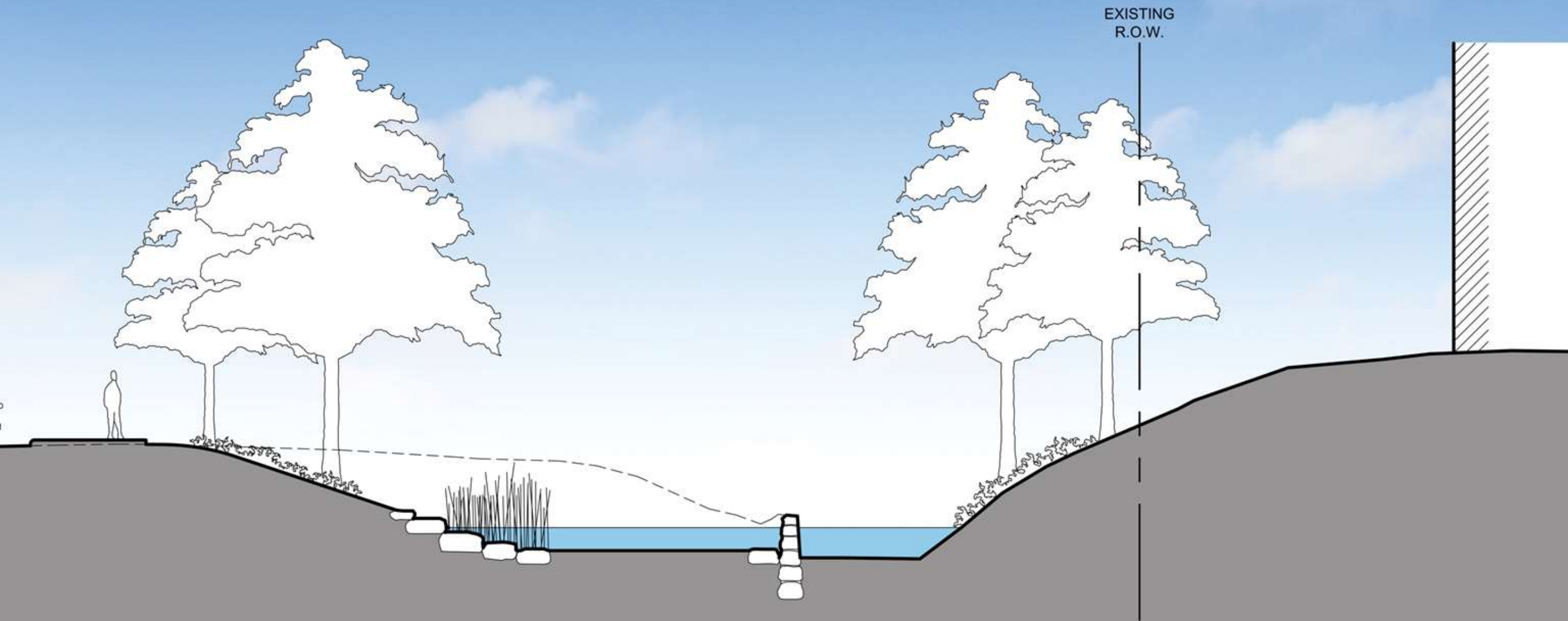




VILLA LAGUNILLA



VILLA LAGUNILLA



ALAMEDA AGUA ANTIGUA

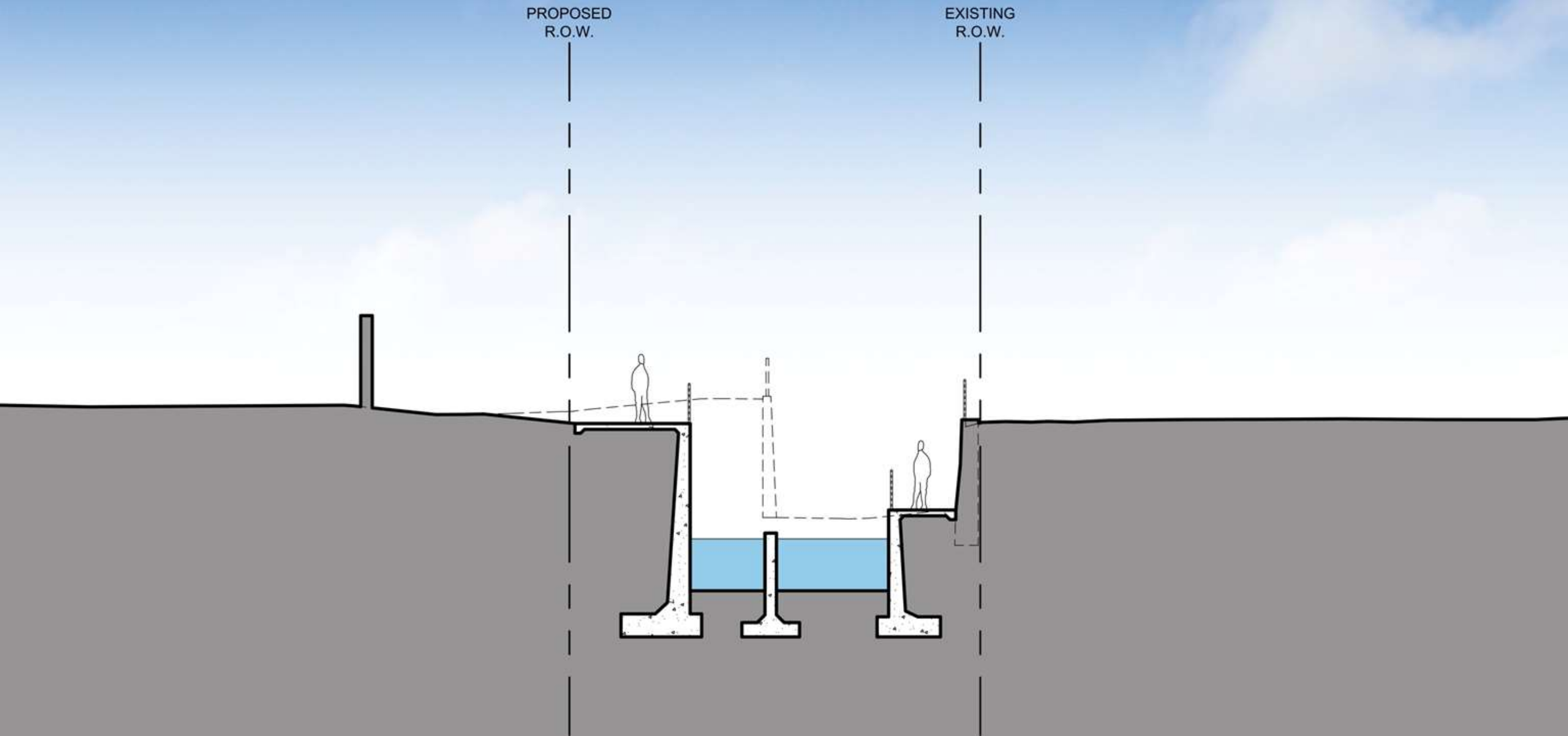




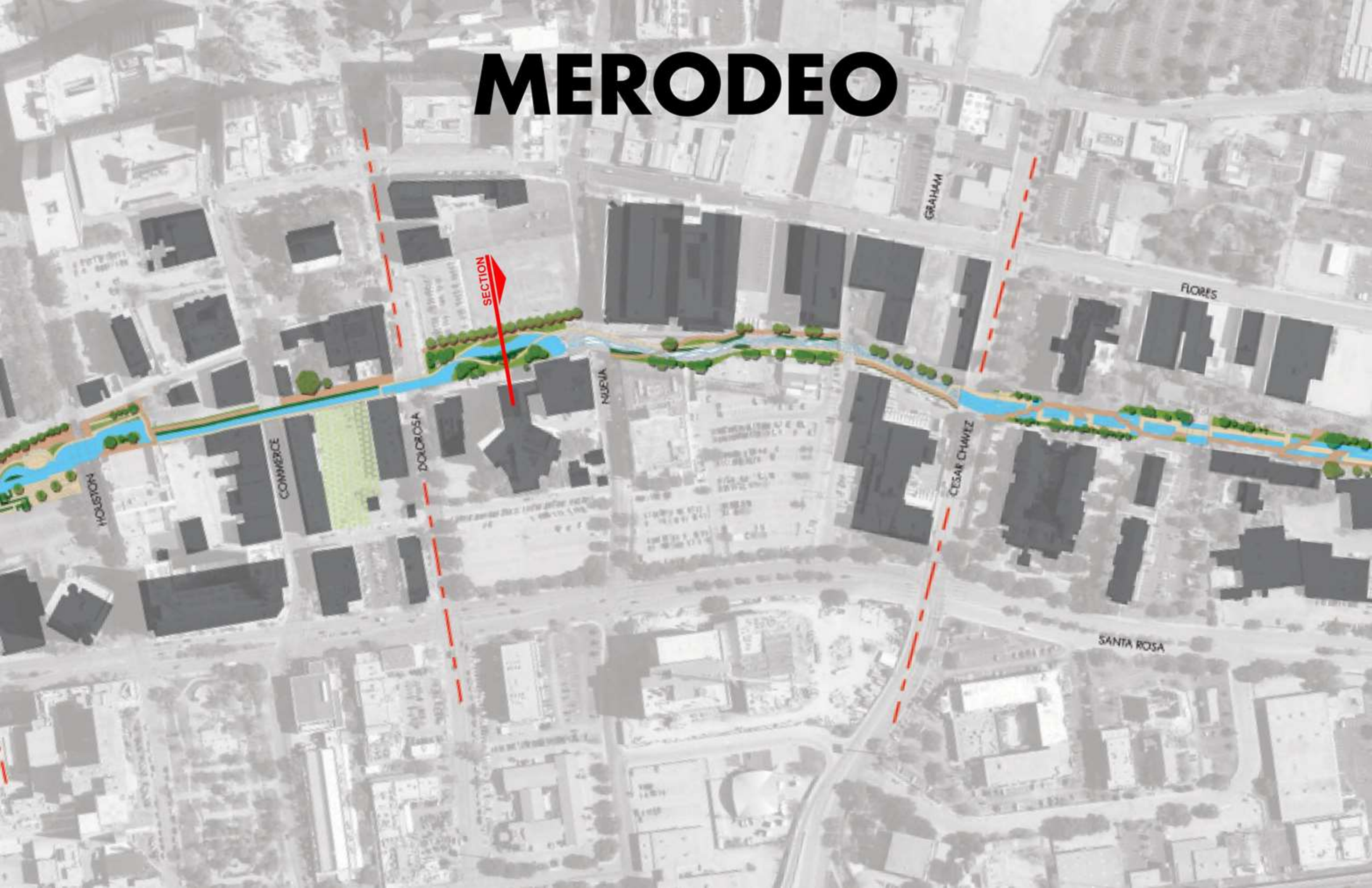
ALAMEDA AGUA ANTIGUA



ALAMEDA AGUA ANTIGUA



MERODEO



MERODEO

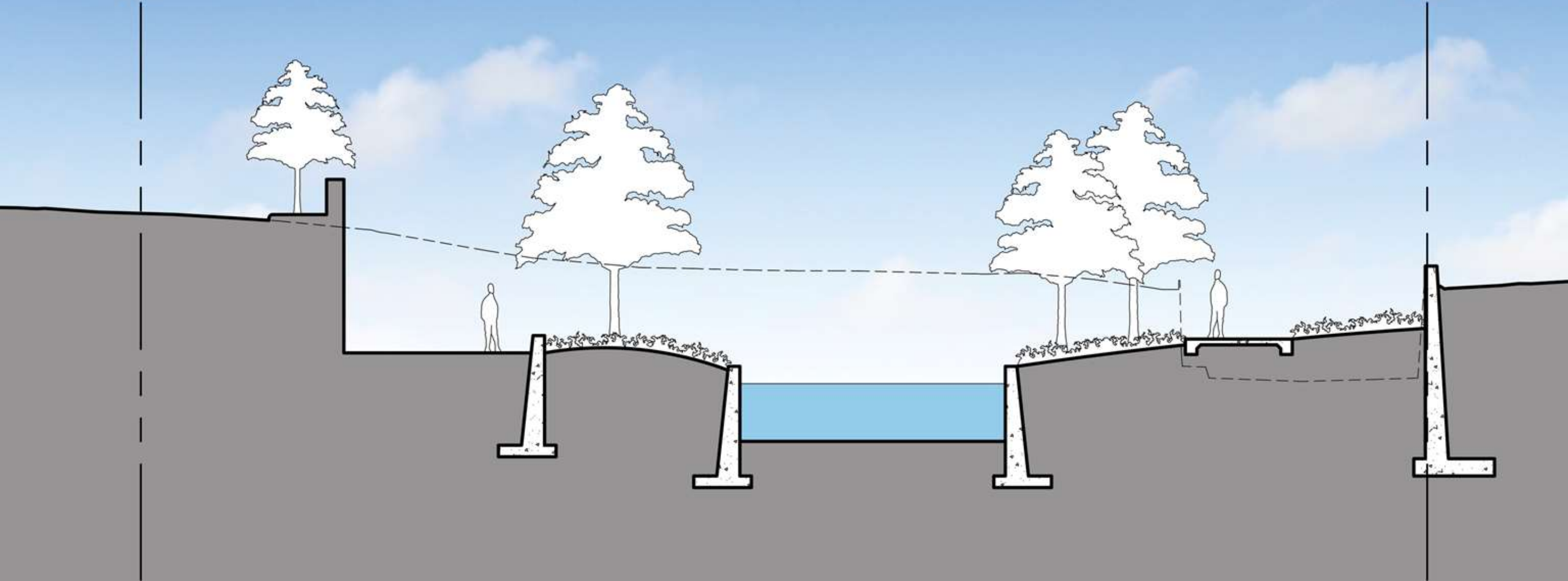




MERODEO

PROPOSED
R.O.W.

EXISTING
R.O.W.



CANAL PRINCIPAL

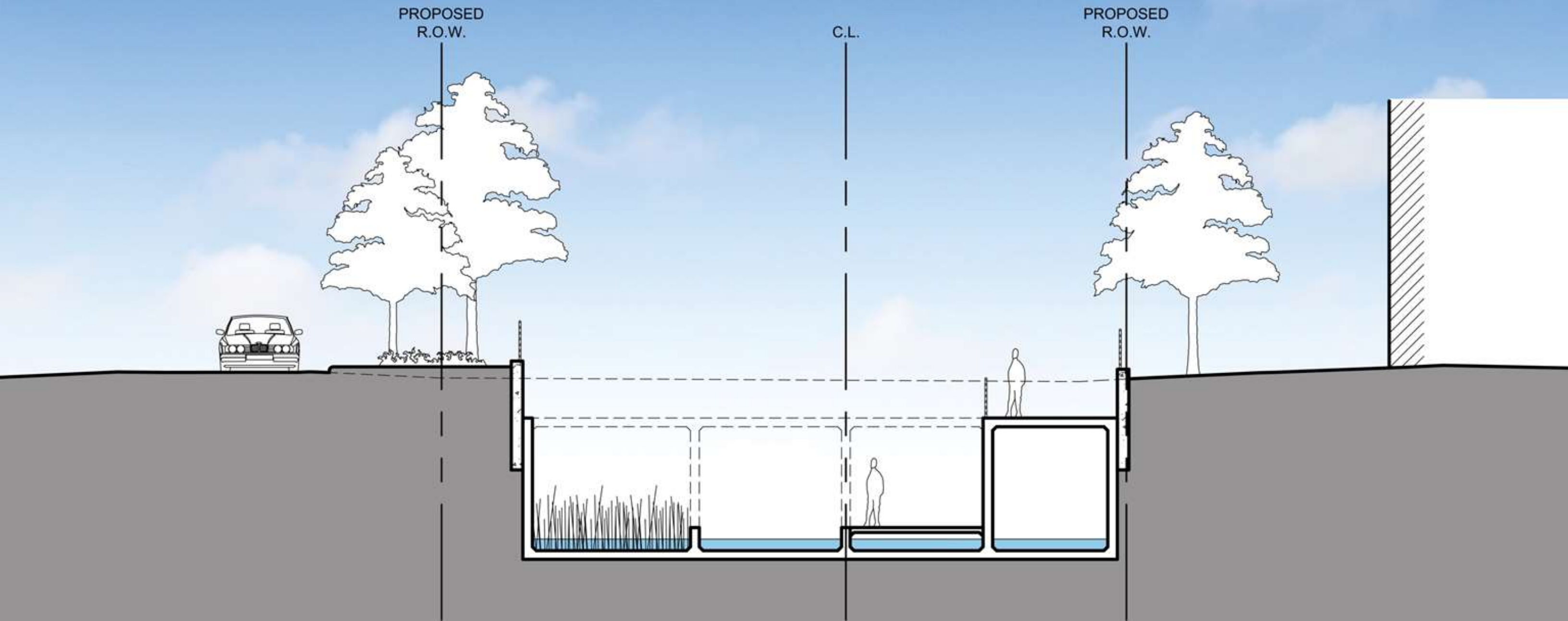






CANAL PRINCIPAL

CANAL PRINCIPAL



CAMPO ABAJO



SHERIDAN

ARSENAL

GUADALUPE

SECTION

CARR

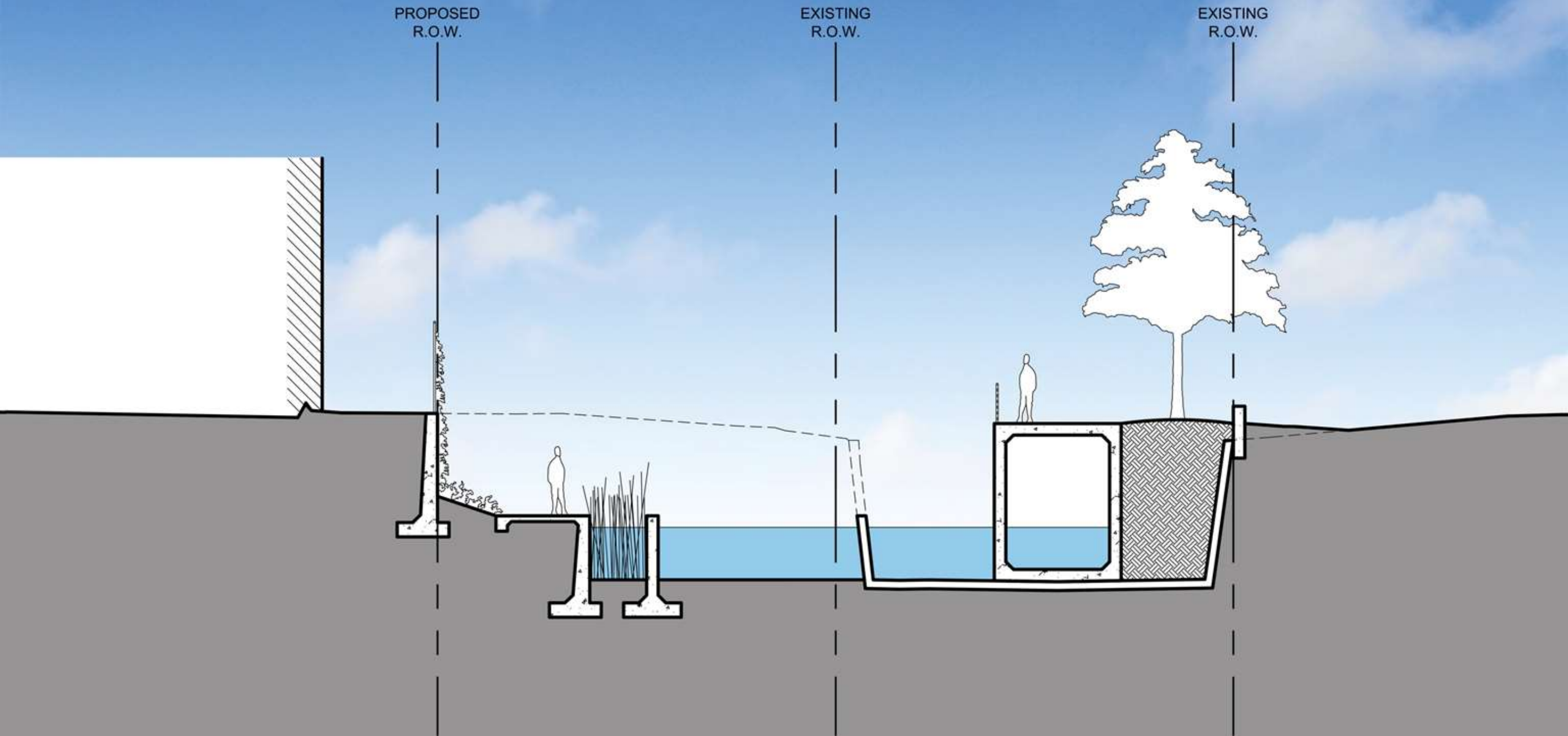
S. ALAMO



CAMPO ABAJO



CAMPO ABAJO



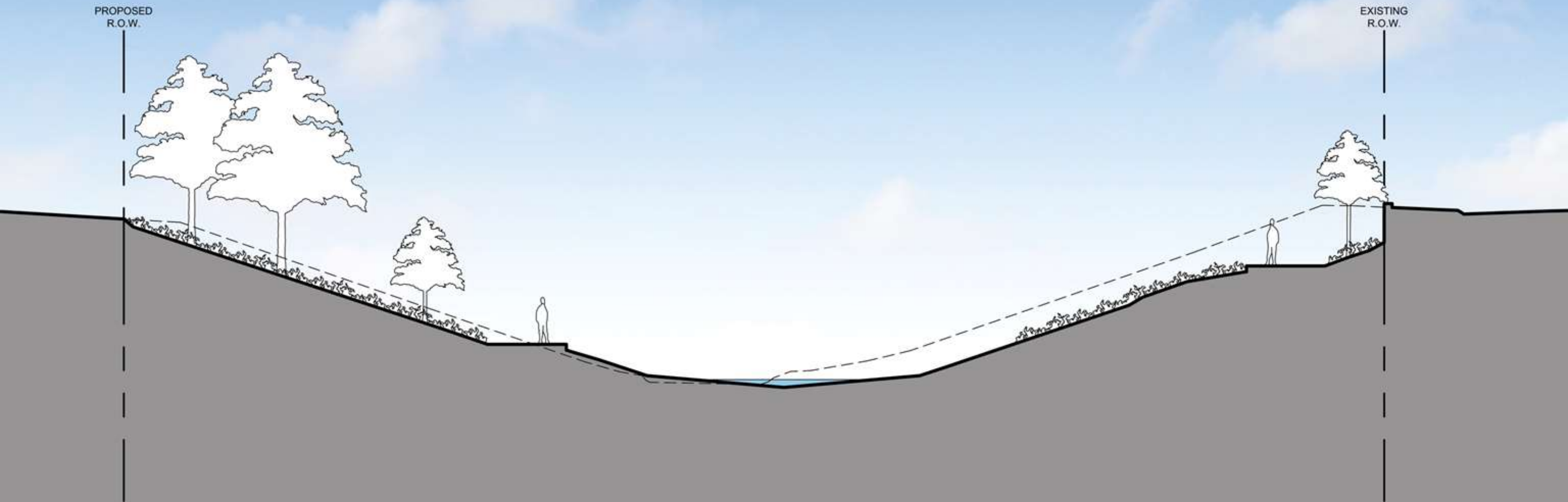
LOWER REACH



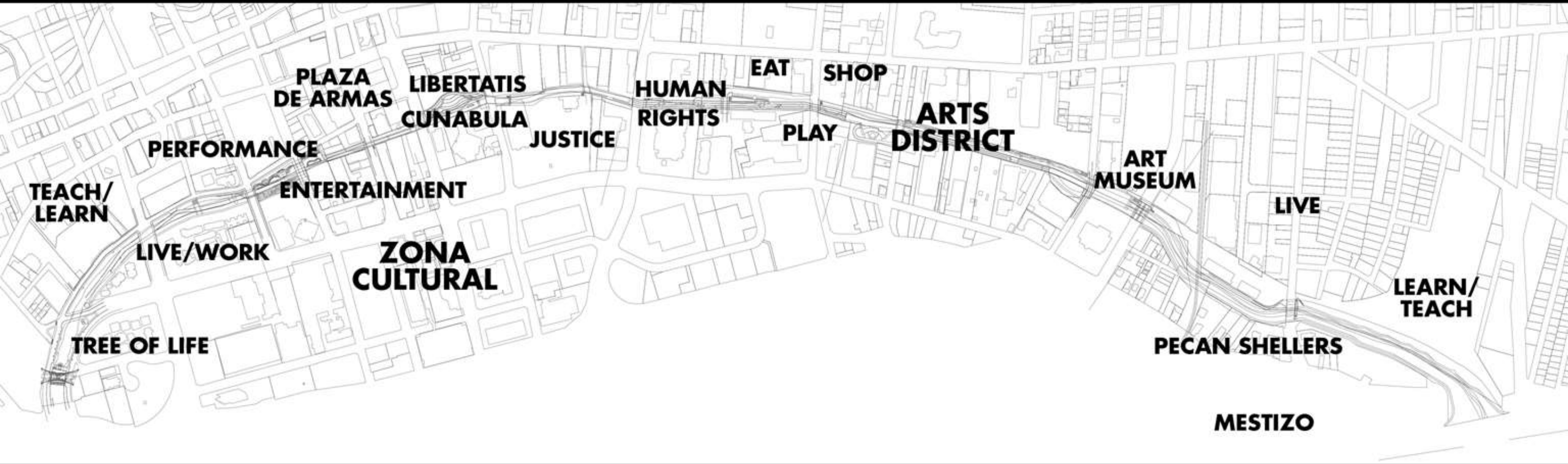
LOWER REACH

PROPOSED
R.O.W.

EXISTING
R.O.W.



RECREATE THE CULTURAL LANDSCAPE





**SAN
PEDRO
CREEK
CULTURE PARK**

HOWARD W. PEAK GREENWAY TRAILS



Parks & Recreation Department
Westside Creeks Restoration
Oversight Committee
April 14, 2015



PROJECT UPDATE



- 47 miles of trail completed to date
- 15 miles of trail under construction
- Approximately 23 miles in development
- Over 1275 acres of Creekways Property acquired to date



2015 SALES TAX INITIATIVE



- \$80m in proposed sales tax funding
- Add to existing greenway land and trails
 - Expansions and Connectivity for City-wide circle
 - Neighborhood Connections along Tributaries
- Incorporate watershed protections (where feasible)

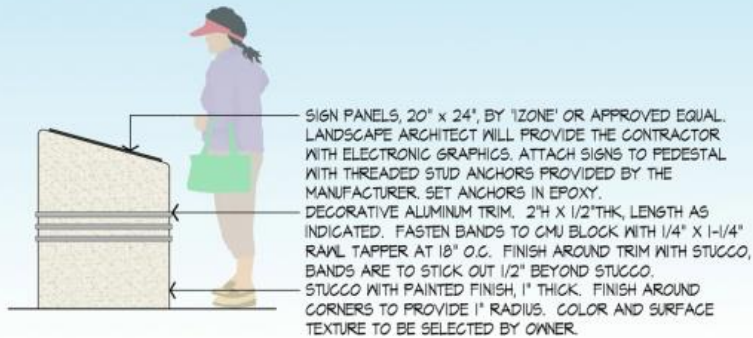


HOWARD W. PEAK GREENWAY TRAILS



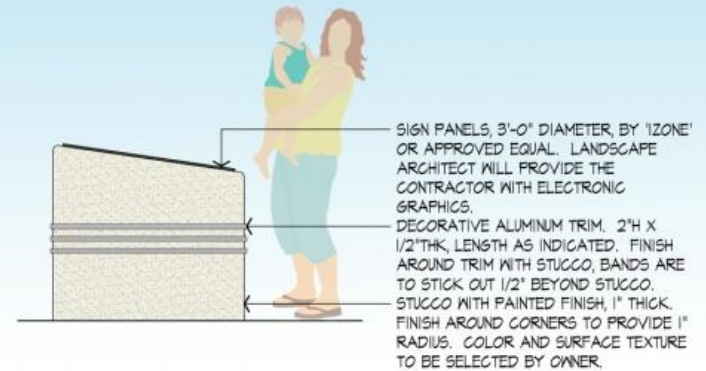


Martinez & Alazan Creek Trails



2 ELEVATION: INTERPRETIVE PEDESTAL

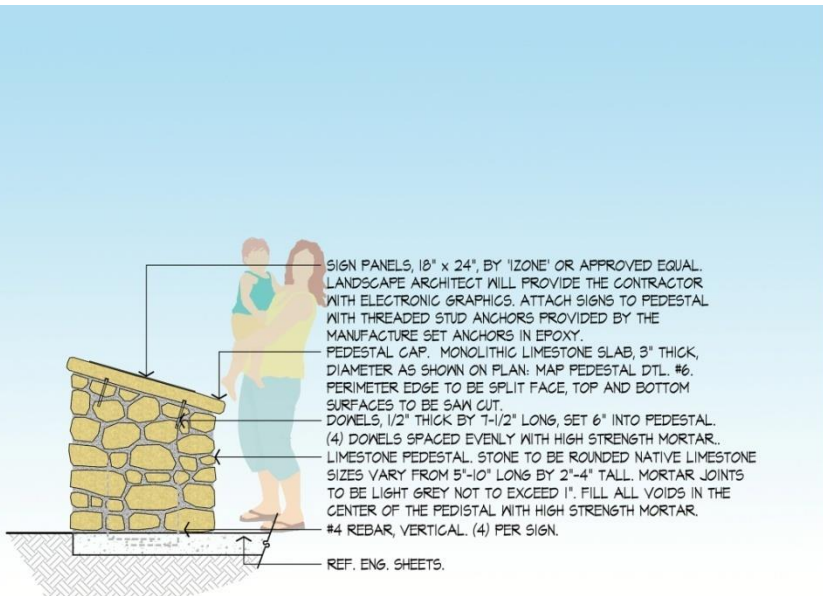
Scale: 1/2" = 1'-0"



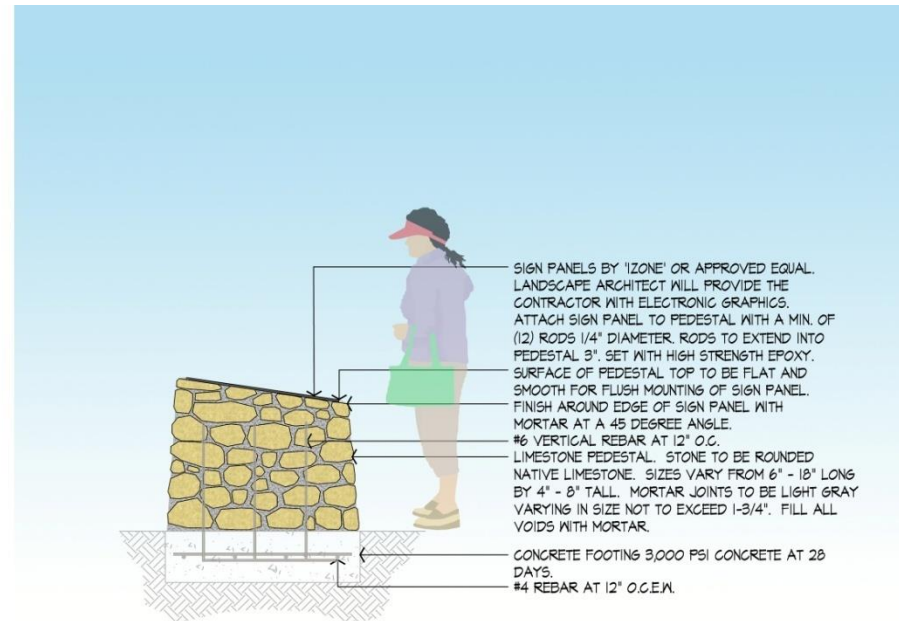
5 ELEVATION: MAP PEDESTAL

Scale: 1/2" = 1'-0"

Martinez & Alazan Creek Trails

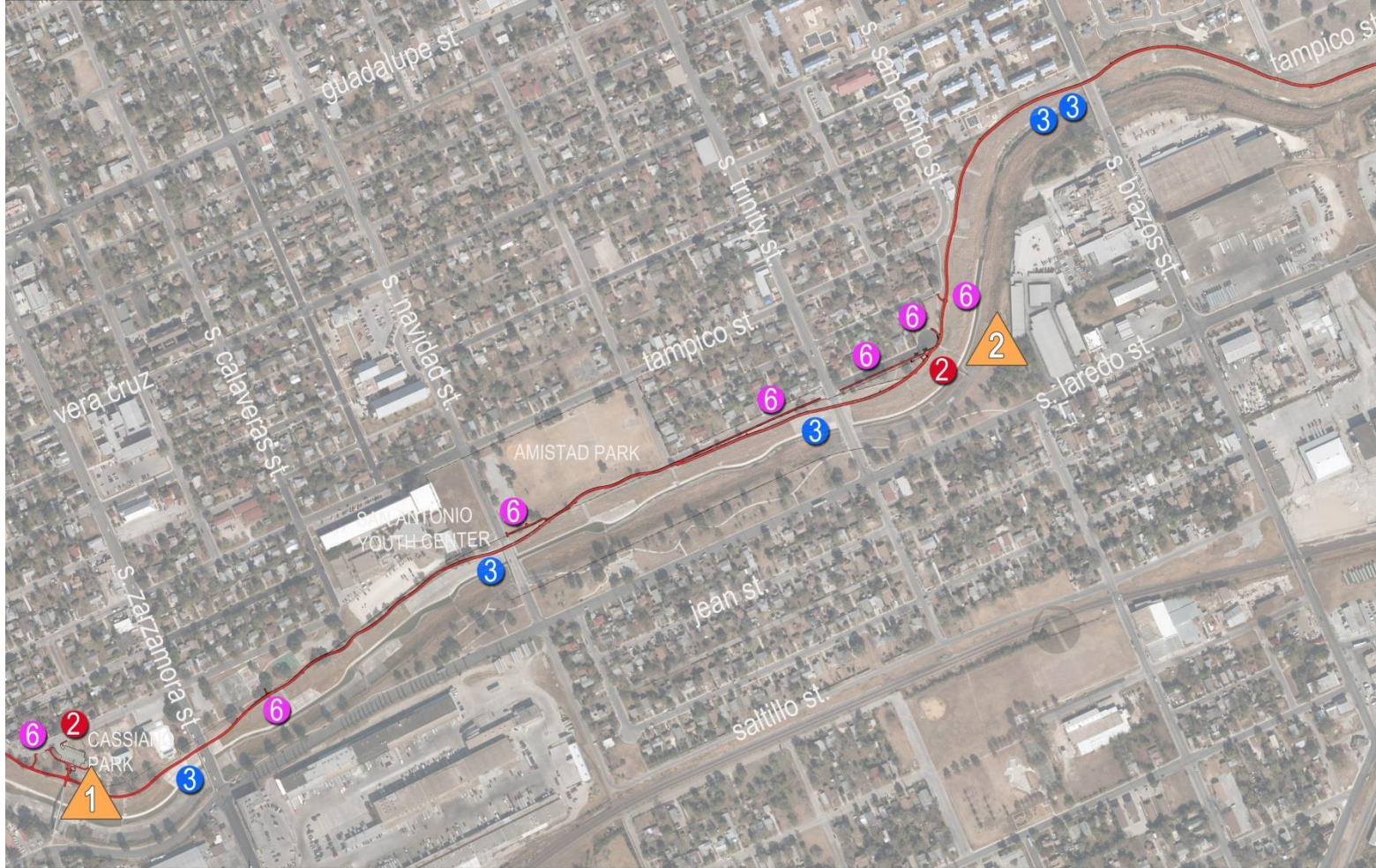


2 SECTION: INTERPRETIVE PEDESTAL
 Scale: 1/2" = 1'-0"



4 SECTION: MAP PEDESTAL
 Scale: 1/2" = 1'-0"

Martinez & Alazan Creek Trails



LEGEND

- | | | |
|---|---|----------------------------------|
| 1 TRAIL NODE
- TRAILHEAD SIGNAGE
- TRAIL MAP PEDESTAL
- INTERPRETIVE PEDESTAL
- PARK RULES SIGNAGE
- SHADE STRUCTURE
- PICNIC TABLE
- BIKE RACK | 3 BELOW STREET CROSSING | 6 NEIGHBORHOOD CONNECTION |
| 2 TRAIL HEAD
- PARKING LOT
- TRAILHEAD SIGNAGE
- TRAIL MAP PEDESTAL
- INTERPRETIVE PEDESTAL
- SHADE STRUCTURE
- PICNIC TABLE
- BIKE RACK | 4 BELOW TRAIN TRACK CROSSING | 7 AT STREET CROSSING |
| 5 PETER REED BASEBALL FIELD |  INTERPRETIVE SIGN | |



open house, april 3, 2014



san antonio river authority terra design group

Apache & San Pedro Creek Trails



LEGEND

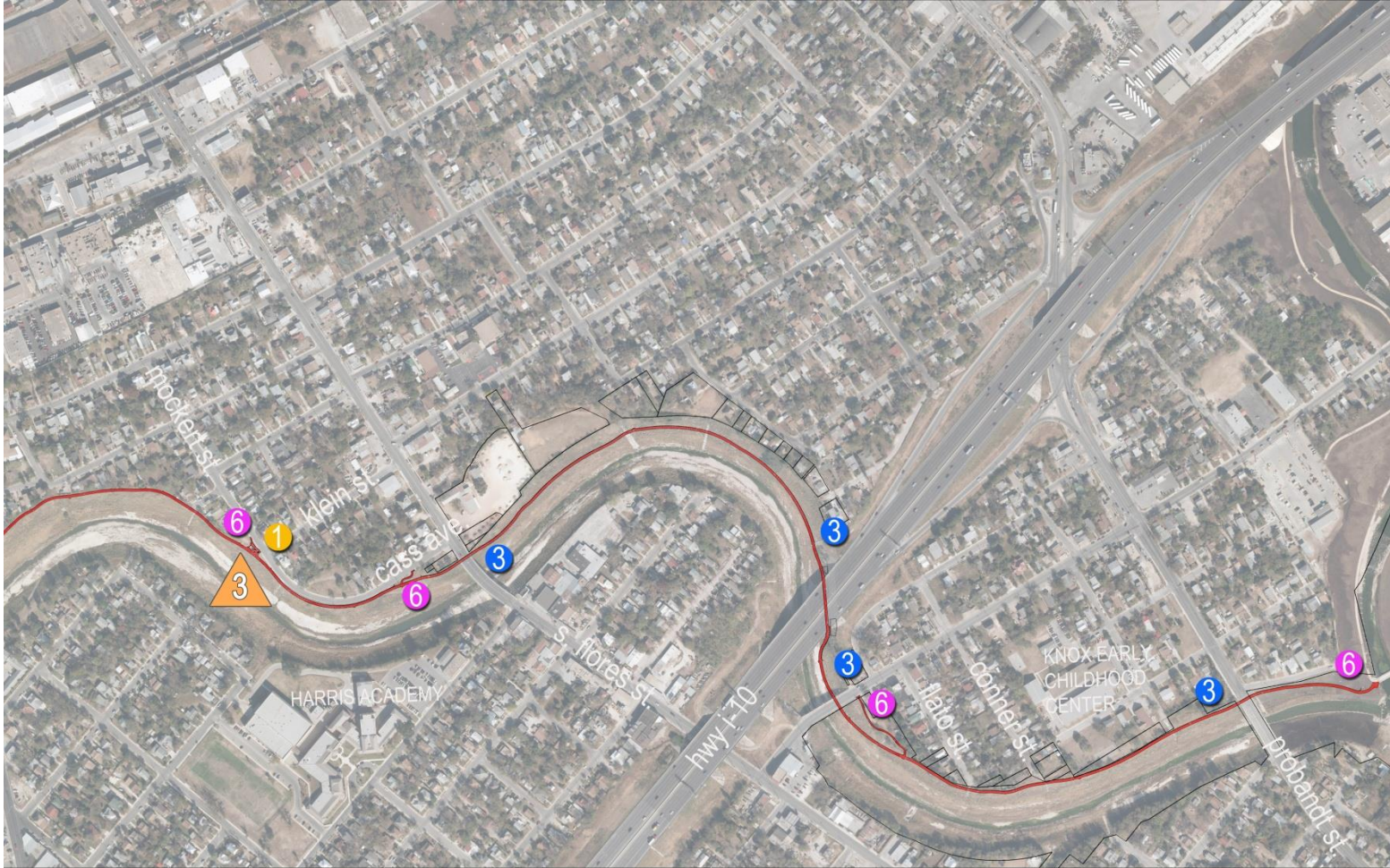
1 TRAIL NODE - TRAILHEAD SIGNAGE - TRAIL MAP PEDESTAL - INTERPRETIVE PEDESTAL - PARK RULES SIGNAGE - SHADE STRUCTURE - PICNIC TABLE - BIKE RACK	3 BELOW STREET CROSSING	6 NEIGHBORHOOD CONNECTION
2 TRAIL HEAD - PARKING LOT - TRAILHEAD SIGNAGE - TRAIL MAP PEDESTAL - INTERPRETIVE PEDESTAL - SHADE STRUCTURE - PICNIC TABLE - BIKE RACK	4 BELOW TRAIN TRACK CROSSING	7 AT STREET CROSSING
 5 PETER REED BASEBALL FIELD	 INTERPRETIVE SIGN	

open house, april 3, 2014






Apache & San Pedro Creek Trails

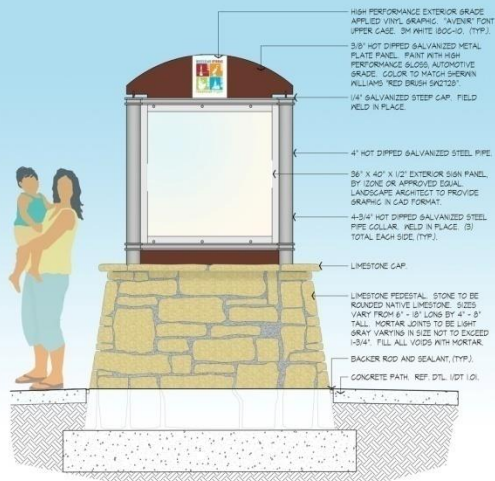


LEGEND

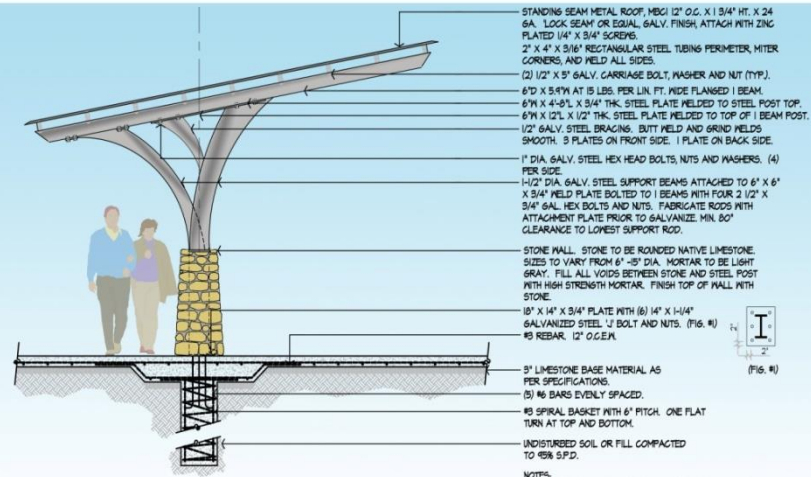
- | | | |
|--|--|---|
| <p>1 TRAIL NODE
 - TRAILHEAD SIGNAGE
 - TRAIL MAP PEDESTAL
 - INTERPRETIVE PEDESTAL
 - PARK RULES SIGNAGE
 - SHADE STRUCTURE
 - PICNIC TABLE
 - BIKE RACK</p> | <p>3 BELOW STREET CROSSING</p> <p>4 BELOW TRAIN TRACK CROSSING</p> <p>6 NEIGHBORHOOD CONNECTION</p> | <p>7 AT STREET CROSSING</p> <p>8 LOW WATER CROSSING</p> <p>▲ INTERPRETIVE SIGN</p> |
|--|--|---|
- 2** TRAIL HEAD
 - PARKING LOT
 - TRAILHEAD SIGNAGE
 - TRAIL MAP PEDESTAL
 - INTERPRETIVE PEDESTAL
 - SHADE STRUCTURE
 - PICNIC TABLE
 - BIKE RACK
-  open house, april 3, 2014

 san antonio river authority
  terra design group
  arcadis

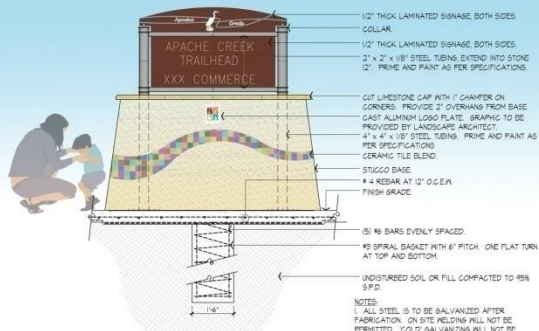
Apache & San Pedro Creek Trails



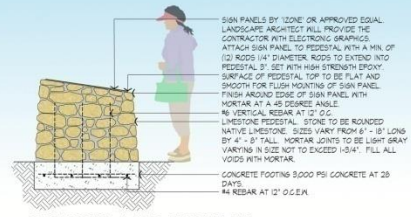
ELEVATION: INTERPRETIVE PEDESTAL



SECTION: SHADE STRUCTURE SIDE
Scale: 3/8" = 1'-0"

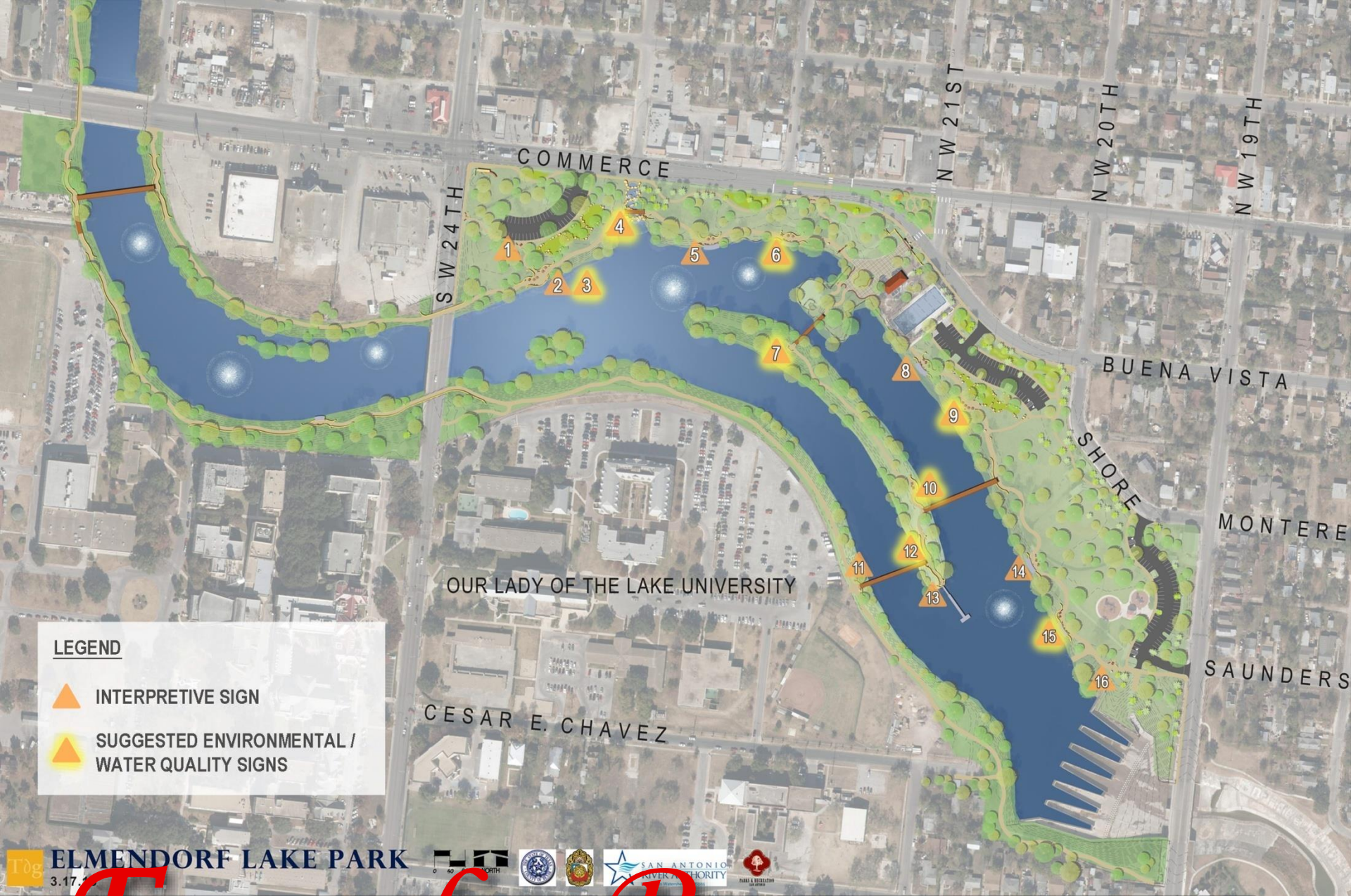


ELEVATION: TRAIL HEAD SIGN FRONT





SECTION: MAP PEDESTAL

Apache Creek And San Pedro Creek Trail



LEGEND

-  INTERPRETIVE SIGN
-  SUGGESTED ENVIRONMENTAL / WATER QUALITY SIGNS

ELMENDORF LAKE PARK

3.17.17



Elmendorf Lake Park









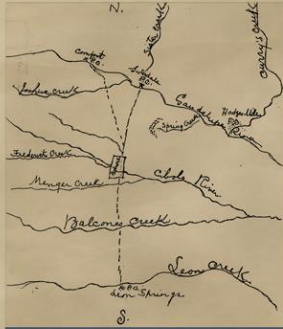




BOERNE: THEN AND NOW

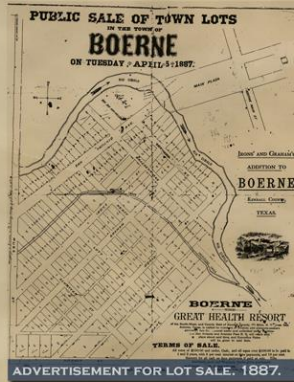
THE CREEK AND THE RAILROAD

Cities grow and leave traces of their beginnings that we can still see today. Many towns in Texas grew around a river or railroad station. Boerne grew around both and these influences are reflected in its form. For example, as you can see in the 1938 aerial, Main Street grew closely to the Cibolo Creek. Victorian Houses are further east on Pecan Street and slightly newer houses are still further east near Plant Street. You could almost picture a ring of growth like the ripples of a stone thrown in a pond spreading out in ever widening circles.



EARLY AREA MAP BY O'GRADY, 1868.

The Currey Trail and the Cibolo Trail connects you to downtown and the Old No. 9 Trail. Boerne is the perfect size to explore on foot and on bicycle. See the map in the bottom right corner.



ADVERTISEMENT FOR LOT SALE, 1887.

BRINGING IN THE RAILROAD

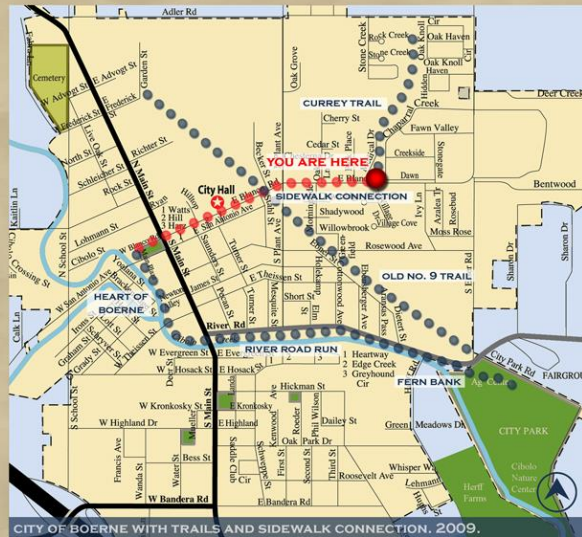
The Flats, a neighborhood on the west side of the Cibolo from Main Plaza, were sold in lots for the town to raise money to bring the railroad to Boerne in 1887.



VIEW OF BOERNE LOOKING NORTH OVER HERFF FARM AND ACROSS CIBOLO CREEK, 1935.



CITY OF BOERNE, 1938.



CITY OF BOERNE WITH TRAILS AND SIDEWALK CONNECTION, 2009.



BOERNE DAM



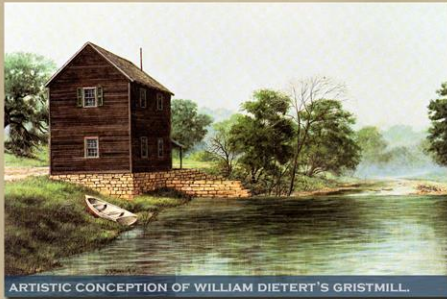
FIRST BUSINESS IN BOERNE

The first business in Boerne used the natural resource of the Cibolo Creek. In 1854, William Dietert left Germany, where his family had been millwrights for generations, and sailed for Texas aboard the *Franziska*. That same year, he built a gristmill and dam on the Cibolo. The hard-working Dietert family later built dams and gristmills in Comfort, Fredericksburg, and Kerrville.

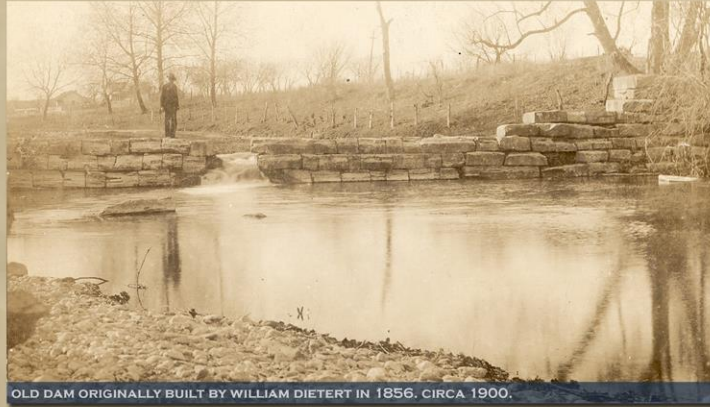


DID YOU KNOW?

A gristmill is a mill where the water provides power to grind grains such as grinding wheat into flour.



ARTISTIC CONCEPTION OF WILLIAM DIETERT'S GRISTMILL.



OLD DAM ORIGINALLY BUILT BY WILLIAM DIETERT IN 1856. CIRCA 1900.



NEW DAM BUILT IN EARLY 1910S. IMAGE CIRCA 1920.



WILLIAM DIETERT'S HOUSE. 1984.

WILLIAM DIETERT'S HOUSE

Near the dam is William Dietert's original house at 604 E. River Road built in 1860. Although it is now a commercial building, you can still see signs that it is an old building with the stonework and the building's compact form. It is one of Boerne's earliest buildings and it has served many uses in its days such as a tavern and house while the gristmill was in service. It had undergone many uses and changes, but was recently restored to its more original form a few decades ago.



LIFE ALONG THE CREEK



SUMMERTIME FREEDOM



frog gig

Juanita Herff Chipman is a great-great-granddaughter of one of the town's early champions, Dr. Ferdinand Herff. She tells of her childhood in the 1930s.

"Mother gave us the freedom to be ourselves. She allowed us to get dirty, to bathe only when we swam in the pool, which was usually twice every day...The Cibolo Creek, with its maidenhair fern banks, huge cypress trees, falls and shadows and deep, dark, rocky pools, was another favorite place. We would swim or fish in the beautiful but sometimes slimy creek, wading through clinging waterweeds, reminding us of fuzzy cattails.

There, at night, we would go frog gigging with Augie in a flat green kayak, which our father and Augie had made. We would carry a lantern and listen for the boorok, boorok, boorok sounds of the papa frogs. The light from the lantern would mesmerize the frogs long enough for one of us to spear the frog with the satanic-looking gig." - Juanita Herff Chipman



MAKING SANDWICHES FOR PICNIC LUNCH BESIDE CIBOLO CREEK, 1938.



ROWING IN THE CANOE.



JUST FLOATING IN THE RIVER.



SUMMER AFTERNOON.



PICNIC ALONG THE CIBOLO CREEK, 1938.



SACHS GARAGE



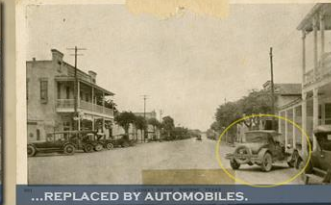
CONSTRUCTION OF THE GARAGE IN THE 1910S.

A NEW BUSINESS

The United States underwent change with the introduction of the car in the early 1900s and particularly in 1908 when Henry Ford made the affordable Model T. Change also came to Boerne as automobiles replaced horses on Main Street. Walter Voges built a two-story garage in 1916 and although some garages served horses and/or cars, this one was just for cars. It could hold up to nineteen cars and had one pump up front. Business had already slowed in the late 1920s before the Great Depression. Voges sold the business to Martin Sachs from Houston.



ON MAIN STREET, HORSES WERE...



...REPLACED BY AUTOMOBILES.

THE OLDEST GARAGE IN BOERNE

Martin Sachs added another one-story addition by 1937. After several decades, Sachs began to call his garage "the Oldest Garage in Boerne." The phone number was only two digits: #33. Mr. Sachs loved to collect antique cars and was a generous man in the community. He added selling Frigidaire products to his business. The garage stayed open until the flood in 1964 damaged it severely. He closed down the garage, but kept selling Frigidaire products until his death in 1978. Mrs. Sachs, his widow, lived a secluded life in a small trailer inside the garage for about ten years. By the time that his widow sold the property in 1988, it was ready for a new use.

For the happiest miles of your life!

Dollar for Dollar you can't beat a PONTIAC

SACHS GARAGE
Boerne, Texas

"At The Bridge"

ADVERTISEMENT IN THE 1950S.

NEW USES IN OLD BUILDINGS

Today the garage is an example of sensitive redevelopment that turns an old building to a new use without tearing it down. Hadel and Dwayne Haskett purchased the property and turned it into a restaurant, retail, and office space. The new doors are sensitively fitted into the opening that used to have garage doors. These details preserve traces of the past while allowing the building to meet current needs.



GARAGE DOOR BECAME ENTRY DOORS.

STOP QUICK AND LIVE LONGER

All Bestos Brake Lining Installed THE FACTORY WAY

AT
SACHS GARAGE

AT THE BRIDGE
Boerne, Texas

Phone 33.

ADVERTISEMENT. NOTICE THE PHONE NUMBER.

STATE OF TEXAS SIXTEEN EIGHT TWENTY SIX
HIGHWAY COMMISSION
OFFICIAL HEADLIGHT CERTIFICATE No. 4516

THIS CERTIFIES that the headlight equipment on the motor vehicle described below has this day been tested and adjusted and complies with the requirements of the Texas Automobile Headlight Law.

Make and Type: *Coupe*
KENDALL
KENDALL COUNTY
In charge of Station:

OFFICIAL HEADLIGHT CERTIFICATE, 1926.



DID YOU KNOW?

In Kendall County in 1926, your car needed a headlight certificate. Electric headlights on cars were new with many different designs - some worked and some did not. The county wanted to ensure that they actually worked, which is similar to car inspections today.



SHEEP DIP CROSSING



Herff Road at Cibolo Creek has another local name of "Sheep Dip Crossing," which has several stories behind the name. One of the best of the local lore is the following found by Brent Evans along with his explanation of sheep dip.

WHAT'S SHEEP DIP?

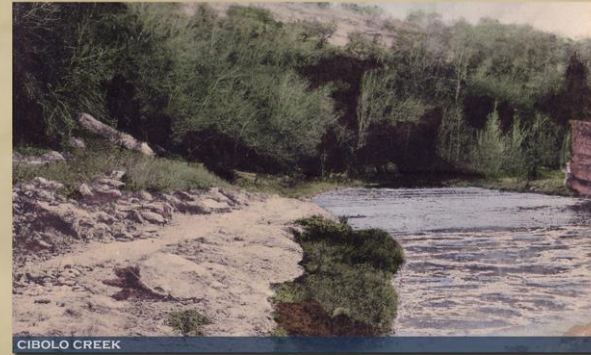
"For parasite control, sheep are usually dunked in a water-based pesticide solution in a dip vat – a long, narrow, concrete-lined trench. Why would a shepherd want to dunk his sheep in pesticide in or near a creek, where the stuff could be so quickly washed off?"

- From *Boerne Stories* 2009 by Brent Evans

MR. NORRIS'S EXPLANATION

Mr. Norris's father had worked for Dr. Herff so Mr. Norris had a long history in Boerne and a good chance of knowing the real story. His response to Brent's question is below.

"Well, it was in nineteen and thirty two. Joe Zoeller and Louie Weidner wuz drivin' a buncha sheep from the Herff Ranch up to Oscar Bergmann's place. They wuz gonna push 'em across the Cibolo (pronounced "SEE blow") there at the low crossing below the dam at Herff Road.' He laughed to himself and went on. 'Now, you know the "Seeblow" wuz nuthin' but a little trickle, about a few inches deep and a few feet across, but you dontcha know those sheep wuz just balkin' and refusing to cross that creek. Those boys had to git off their horses and drag the whole herd across that mud hole one at a time. It took all afternoon. They wuz both sheep faced and covered with mud and stinkin' to high heaven before it wuz all over. Well, the whole town came out to watch. People wuz laughin' at them boys for days, and took to calling the spot 'Sheep Dip Crossing' just to tease 'em.'"
- From *Boerne Stories* 2009 by Brent Evans



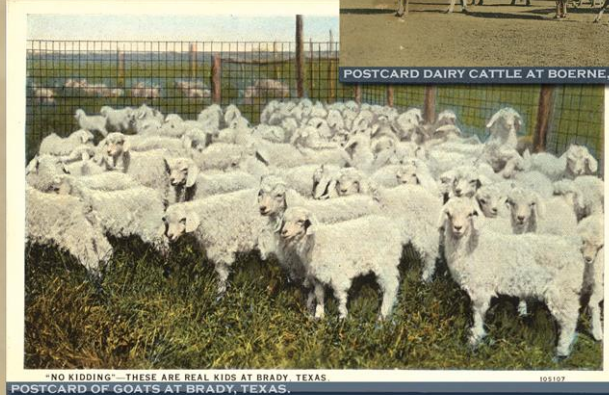
CIBOLO CREEK



NEWBORN LAMB.



POSTCARD DAIRY CATTLE AT BOERNE, TEXAS. 1911.



"NO KIDDING" — THESE ARE REAL KIDS AT BRADY, TEXAS.
POSTCARD OF GOATS AT BRADY, TEXAS.



SUFFOLK SHEEP.

RAINWATER HARVEST



OVERVIEW

Rainwater harvest is an ancient concept that is being reintroduced to allow us to make the most of our limited water resources in the semi-arid Texas Hill Country.



DID YOU KNOW?

On small islands, rainwater collection is the preferred water source. Several islands including Barbados have laws requiring cisterns in new construction.



Assume the amount of runoff collected is .55 gallons per square foot of surface catchment area, or the library's roof, for each inch of rainfall. If the Heath Library has a catchment area of 18,500 square feet, how many gallons could you collect in a year? You will need to find the annual rainfall on the rainfall map to the right.

Formula: Collection rate (gallons) x Catchment area (sq. ft.) x Annual Rainfall (in.) = Total number of gallons

What if the library were in El Paso?

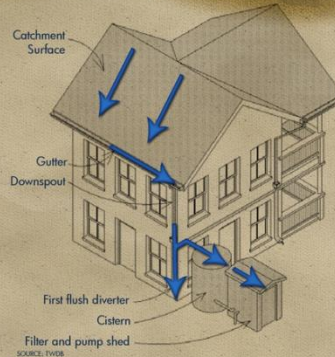
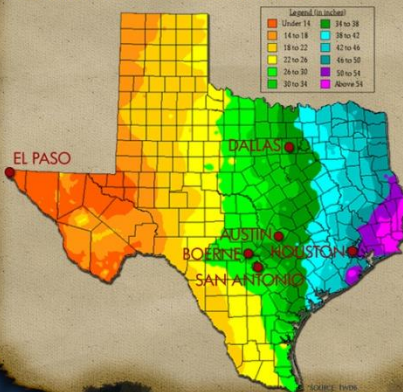
FREE WATER AVAILABLE

Rain replenishes the earth and refills our streams. It is pure and free of cost. The water flowing out of the faucet seems abundant, but considerable energy and infrastructure go into making it potable, or safe to drink. As Boerne's population increases, its water supply does not necessarily increase so we need to consider ways to be wise with our limited resource. With rainwater harvesting the Heath Library collects water actively with the cistern that you see in front of you and also passively with bioswales in the parking lot.

RAINWATER'S BENEFITS

The rainwater here gives Heath Library a self-sufficient water supply for irrigation, which allows municipal water to be kept for other needs and reduces the library's water bill. The rainwater is high quality and relatively pure without heavy mineral content and salts. The plants perform better with rainwater especially since it reduces excessive soil salts, which harm plants. The rooftop rainwater system is inexpensive to construct and maintain.

ANNUAL RAINFALL RATE IN TEXAS



Wars have been fought and won over ownership of water or the ability to catch rainwater. It has even been said that water may be the oil of the 21st century. Continuing this thought today, collecting and using water more than one time can help reduce dependence on existing fresh water supplies.

- Heather Kinkade-Levario in *Design for Water*



Bioswales purify water and keep excessive water from reaching Cibolo Creek and causing flooding.



SOURCE: BOERNE HILL COUNTRY

ACTIVE HARVESTING

Rainwater is harvested from a catchment surface, which is typically a roof, and channeled through a system of gutters and downspouts. Since rainwater from the roof can hold debris like leaves, twigs, or animal droppings, a first flush diverter is often used. As water from the start of the rainstorm moves to the downspout, it falls into the first flush filter instead. When the water reaches the top of the filter, the rest of the water flows into the downspout. The first flush filter must be cleaned after each rainstorm. The remaining water is stored in a cistern either aboveground, as shown in these images, or underground. The tank can be gravity-fed or use a pump.



METAL CISTERN IN BOERNE

SOURCE: PAUL BARVICK

PASSIVE HARVESTING

Passive rainwater harvesting occurs when water is directed to depressions in the earth. One way to do this is with bioswales, which are depressions that collect water during a rainstorm and are lined with selected plants. If there is too much water, the swale will funnel the water offsite, but this feature allows the plants an opportunity to absorb the water and also let it soak into the earth and recharge aquifers.

Irrigation of the land with seawater desalinated by fusion power is ancient. It is called Rain.

- Michael McClary



STONE CISTERN IN AUSTIN

SOURCE: JANE REICHARDT

HISTORIC CISTERN IN KERR COUNTY



SOURCE: USA HOME

A simpler do-it-yourself alternative is a rain barrel. Many cities offer incentives for installation.

RAIN BARREL

SOURCE: CHAN AD

HISTORY OF KENDALL COUNTY

GUADALUPE RIVER

PREHISTORIC

Prehistoric people hunt and gather in the region as early as 10,000 years ago.

NATIVE AMERICANS

Comanches, Lipan Apaches and Kiowas are the main tribes in the area by 1800s.

SPANISH EXPLORERS

1689
The name Guadalupe, or Nuestra Señora de Guadalupe, was applied to the present river when the stream was so named by the Spanish explorer Alonso De León Domingo Terán de los Rios.

1690
Fray Damian Massanet instructed Alonso De León to leave imported Spanish horses and cows at every river crossing, which started the wild herds of longhorn and mustangs along the Nueces, Medina, Guadalupe and Trinity River crossings of the Old San Antonio Road.

1720s
European settlement along the Guadalupe began as early as the 1720s when the Spanish established several missions above the site of present day Victoria.

Most of the early explorers, including Father Isidro Félix de Espinosa, Domingo Ramón, and the Marqués de Aguayo, called the Guadalupe River the San Ybón above its junction with the Comal and referred to the Comal River as the Guadalupe.

1777
The name Guadalupe was applied to the present river when Pedro de Rivera y Villalón so referred to it.

EUROPEAN SETTLERS

1844
Battle of Walker's Creek – In June, Captain Jack Hayes and 14 Texas Rangers battled and repelled a large band of Comanches led by Yellow Wolf at the Pinto Trail crossing on the Guadalupe. This confrontation was the first time that an entire company of Rangers fought with Colt revolvers.

1850s
Dr. Ernst Kapp creates and promotes, Badenthal, Texas's first health spa in Sisterdale, which consisted of hydropathy and a gymnastics regime.

1861
Brevet Colonel Robert E. Lee crosses the Guadalupe River for the last time as he travels from Ft. Mason to San Antonio for his resignation from the United States Army.

John Samson from the Curry Creek settlement is among the German Unionists that escaped from the Battle of the Nueces Massacre.

1880s
The SAB&AP constructs a water tank at Waring that is fed with water from the Guadalupe River.

TODAY

1900
Guadalupe River floods in January and topples two of the three wooden trusses of the SAB&AP railroad bridge.

1914
The San Antonio, Fredericksburg and Northern Railway Company completes its line from the SAB&AP Fredericksburg Junction to the Guadalupe River to Fredericksburg.

1933
State legislature established the Guadalupe-Blanco River Authority (GBRA) to oversee the control, storage, and distribution of water from the Guadalupe and Blanco rivers.

1958
Work begins on the Canyon Lake Dam and it is completed in 1964.

2002
The Canyon Lake Gorge is formed from this July flood, which resulted in the spillway's first time use with water flowing over it for six weeks.

Cow Creek Groundwater Conservation District is created by referendum.

2006
GBRA Western Canyon Regional Water Supply Project begins in 2004 and is completed in 2006.

2009
Kendall County purchase and develops James Kiehl River Bend Park as part of the 2005 Park Bond program, the first county park along the Guadalupe River.



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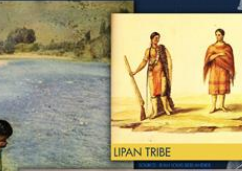
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Fischer Park

NORTH PARK RIDGE DR.

OLD MCQUEENEY ROAD

W. COUNTY LINE ROAD



- A NEIGHBORHOOD CONNECTION AT NORTH PARK RIDGE DR.
- B DETENTION POND
- C TRAIL NODE
- D PRAIRIE RESTORATION AND WILDFLOWER PLANTINGS
- E BIO-SWALES
- F PLAYSCAPE (5-12 YEAR OLDS)
- G TOT PLAYSCAPE (2-5 YEAR OLDS)
- H SPRAYGROUND AREA
- I GRAND PAVILION

* RENTAL SPACES INDICATED BY ORANGE SYMBOLS

- J SMALL PAVILIONS (a-f)
- K HILLTOP PLAZA
- L HILLTOP PAVILION AND RESTROOM BUILDING
- M AMPHITHEATER
- N NATURE EDUCATION CENTER
- O ARCHEOLOGY DIG
- P DEMONSTRATION GARDEN AND MONARCH WAYSTATION
- Q PONDS
- ★ YOU ARE HERE



Dragonflies



IMAGE SOURCE: Rusty Clark

Did You Know?

The lifespan of an adult dragonfly only lasts about 2 months.

Life Cycle

Adult dragonflies are often large and very colorful, however most of a dragonfly's life is spent underwater in the larval stage as a hungry nymph.

EGG

A female dragonfly will lay her eggs on a submerged plant in the water.



DRAGONFLY LAYING EGGS

IMAGE SOURCE: Eddy Van

NYMPH

The eggs hatch into a nymph. As they grow, the nymphs molt (shed) their skin several times.



NYMPH

IMAGE SOURCE: Dave Huth



DRAGONFLY METAMORPHOSIS

IMAGE SOURCE: Daniel Neal

ADULT

When the nymph is fully grown, it climbs up out of the water and onto a plant to shed its exoskeleton, or outer skin. The old skin is called an *exuvia* and gets left behind on the plant. The dragonfly is now an adult and spreads out its wings to dry before it can fly away.

Dragonfly Habitat

The native vegetation around the edges of ponds and streams are important to dragonflies; providing shelter during poor weather and habitat for them to hunt and mate. Here, adult dragonflies will hunt for food and begin looking for a mate. Once the dragonfly finds a mate, the female finds a calm body of water that will be a good place to lay her eggs, and the life cycle of the dragonfly begins all over again.

The banks of our ponds are being improved to encourage a native plant system that supports native insects, birds, amphibians and mammals by providing food and shelter.



DRAGONFLY

IMAGE SOURCE: Craig O'Neal

Life Above the Ponds

Beak Shape

The shape of a bird's beak can help tell you what kind of food they might eat. Hawks have strong, curved beaks for ripping the flesh of small animals. Seed eaters, like Sparrows and Wrens, have small straight beaks for pecking at seeds and small bugs.

Ducks and some other water birds have wide, flat beaks for scooping up water, plants, and bugs.

Can you tell what these birds like to eat?



YELLOW-RUMPED WARBLER (*Dendroica coronata*)

IMAGE SOURCE: Paul VanDerWerf



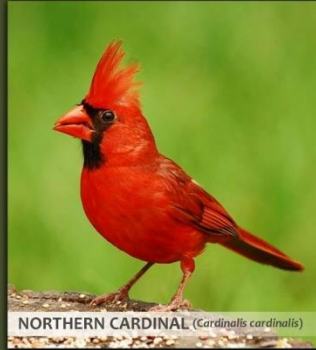
PIED-BILLED GREBE (*Podilymbus podiceps*)

IMAGE SOURCE: Peter Massas



GREAT EGRET (*Ardea alba*)

IMAGE SOURCE: Tracie Hall



NORTHERN CARDINAL (*Cardinalis cardinalis*)



CRESTED CARACARA (*Carcara cheriway*)

IMAGE SOURCE: Manjith Kainickara



GOLDEN-FRONTED WOODPECKER (*Melanerpes aurifrons*)

IMAGE SOURCE: Ralph Arvesen



IMAGE SOURCE: Frank Boston

Did You Know?

Hummingbirds are the only birds that can fly backwards.

Open Your Eyes

Fischer Park provides a rich and diverse habitat for many species of birds. Keep your eyes open as you walk around and listen for songbirds. You may see...

- Pied-billed Grebe
- Great Blue Heron
- Great Egret
- Lesser Scaup
- Black Vulture
- Red-shouldered Hawk
- Crested Caracara
- American Kestrel
- American Coot
- White-winged Dove
- Mourning Dove
- Belter Kingfisher
- Eastern Phoebe
- Northern Cardinal
- European Starling
- Cedar Waxwing
- Western Kingbird
- Eastern Kingbird
- Tree Swallow
- Carolina Wren
- Ruby-crowned Kinglet
- Northern Mockingbird
- Orange-crowned Warbler
- Yellow-rumped Warbler
- Scissor-tailed Flycatcher
- Ruby-throated Hummingbird
- Black-chinned Hummingbird
- Golden-fronted Woodpecker
- Ladder-backed Woodpecker
- Chimney Swift
- Great-tailed Grackle

Life Below the Pond

Fish Swim

The ponds at Fischer Park were first stocked by the Fischer family to provide a fishing hole close to their home. After the City of New Braunfels acquired the property, the Texas Parks and Wildlife Department introduced Channel Catfish in each pond. The ponds also have many native fish such as Large and Small Bluegill, Mosquitofish, Minnows, Largemouth Bass, Warmouth Sunfish, Redear Sunfish, and Green Sunfish.



STOCKING FISH

IMAGE SOURCE: USBR.gov



BLUEGILL (*Lepomis macrochirus*)



CHANNEL CATFISH (*Ictalurus punctatus*)



LARGEMOUTH BASS (*Micropterus salmoides*)



REDEAR SUNFISH (*Lepomis microlophus*)



WARMOUTH SUNFISH (*Lepomis gulosus*)



GREEN SUNFISH (*Lepomis cyanellus*)

IMAGE SOURCE: Fish Artwork courtesy Texas Parks and Wildlife Department © 2004

Frogs Talk

Frogs and toads both produce a rich variety of sounds, calls, and songs during their mating rituals. Callers make sounds to advertise location, attract mates, and defend their territory. Other frogs respond by making return calls, approaching the caller, or by going silent. Frogs have unique calls and sounds depending on their species. Large frogs have deep voices and call at a lower frequency, while small frogs sing in high chirps at higher frequencies. Frogs often send calls through the air, but they can also send calls under water. In some frog species only males sing, but with others both male and females make calls.



RIO GRANDE LEOPARD FROG (*Lithobates berlandieri*)

IMAGE SOURCE: Hugo Claessen

Rio Grande Leopard Frogs have a loud rattling call made by males.



TEXAS TOAD (*Anaxyrus speciosus*)

IMAGE SOURCE: The Blair Society

Male Texas Toads call by making a repeated series of short, strong trills.

Turtles Paddle

The ponds at Fischer Park provide a clean and healthy environment with plenty of food, shelter, and hiding places, ideal for wild pond turtles. Pond climate is important to turtles because their body temperature is directly related to the temperature of their environment. In order to keep their temperature between 75 and 90 degrees, turtles move around throughout the day. You may see them settled on logs or rocks to warm up from the sun or sliding into the water to cool off. Climate also influences a turtle's gender, which is dependent on the temperature of where their eggs are located. Females hatch from eggs in warmer temperatures, and males from cooler temperatures. However, climate changes make it harder for nests to be exposed to different temperatures. As a result, more female turtles are hatching than males.



RED EARED SLIDER TURTLES (*Trachemys scripta elegans*)

IMAGE SOURCE: Robert Nunnally



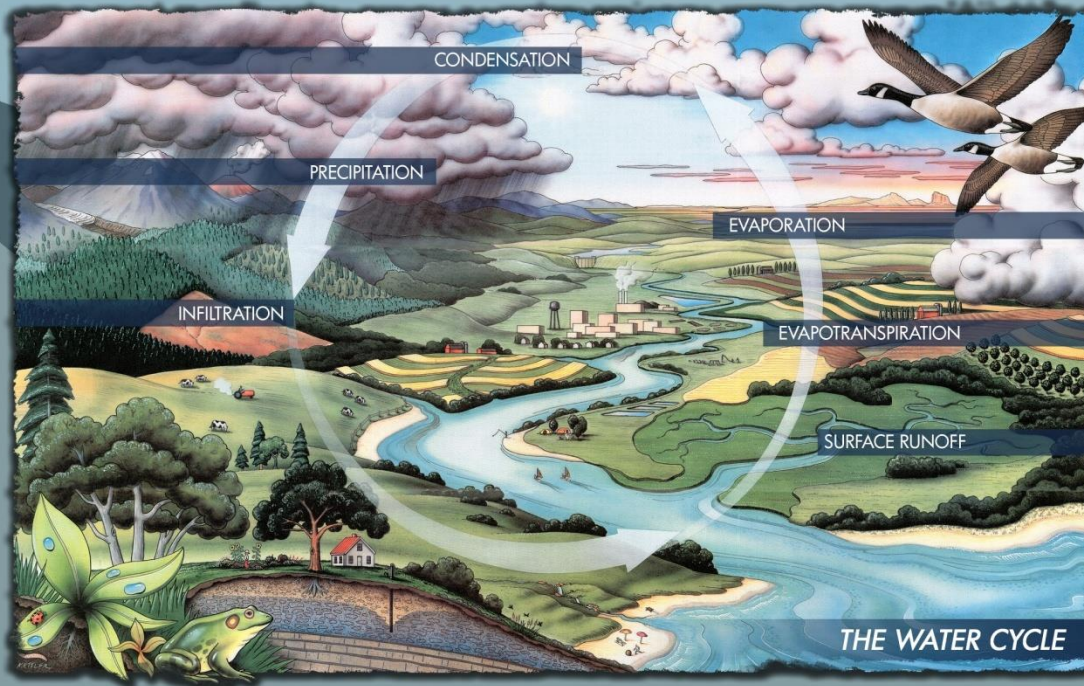
WESTERN POND TURTLES (*Actinemys marmorata*)

IMAGE SOURCE: Jerry Kirkhart

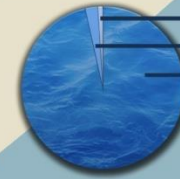
The Water Cycle

The Mighty Molecule

Water is everywhere, but it is far from ordinary. Its unique chemical and physical properties have shaped the land you see around you and are at this very minute sustaining the life inside of you (the human body is about 60% water). It is the only substance on earth that naturally changes from a gas to a liquid to a solid. It constantly moves and recycles with evaporation, evapotranspiration, condensation, precipitation and runoff. Could you imagine life if water was all liquid or all ice or all water vapor?



Where Is All The Water In the World?



- Freshwater in rivers, lakes, aquifers, etc. - 1%
- Freshwater frozen in glaciers - 2%
- Saltwater - 97%

Do we have a large supply of freshwater?

How Long Does The Water Cycle Take?

"It ranges from minutes to hours, as when a rainstorm blows inland from the sea, to thousands of years, the time during which a water drop may be frozen in a glacier...given enough time-hundreds of thousands, or millions, of years-all water circulates."

- E.C. Pielou in *Fresh Water*

How Does The Water Cycle Work?

The sun's rays heat the surface of water in ponds, rivers, oceans and lakes and it *evaporates*, or rises, into the air as a water vapor. Water can also be released into the air by plants. *Transpiration* occurs when plants lose water from their leaves or stems.

When water vapor rises up above the ground, it becomes colder and the water molecules stick together, forming *condensation*. This can be seen as clouds or fog. When enough water vapor sticks together, it becomes heavy and falls back to earth in the form of rain, hail, sleet or snow, as *precipitation*.

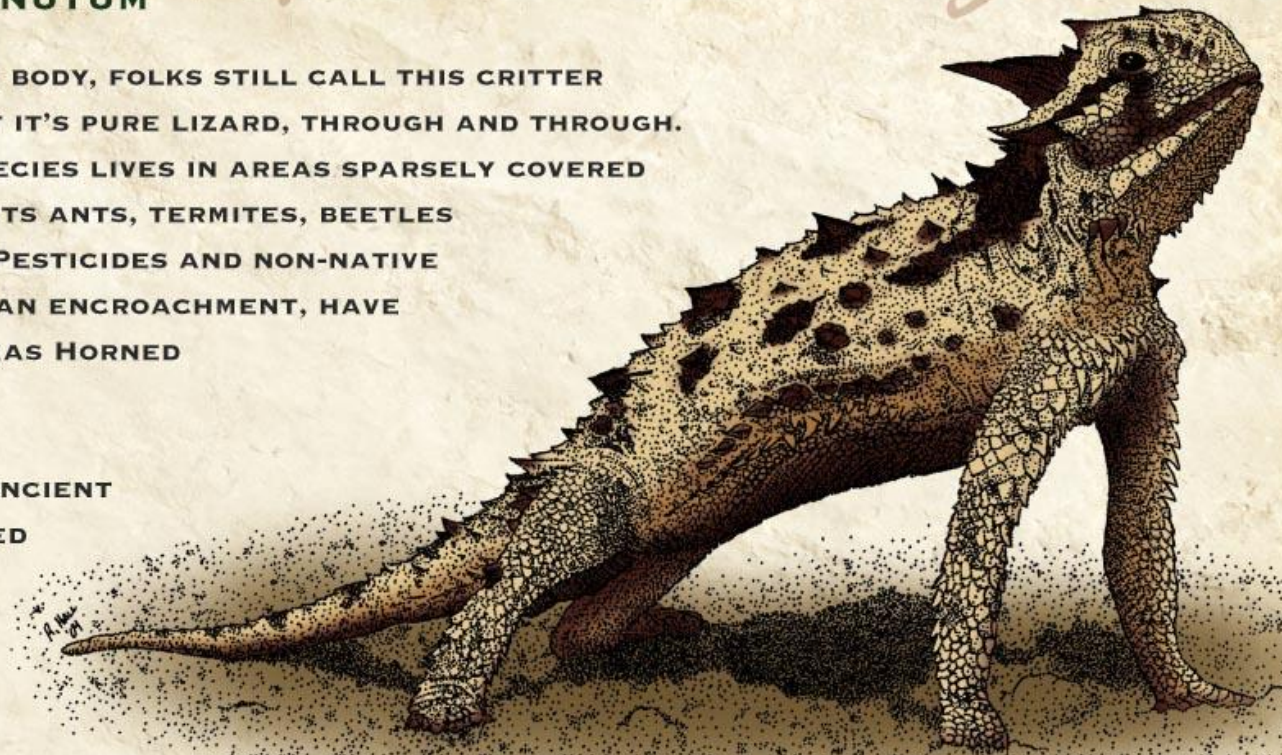
The precipitation that falls back to earth may land in water, like the ponds at Fischer Park or our Comal River, or it may fall on land, where it can *infiltrate*, or soak, into the soil and become part of the groundwater in the aquifer. The groundwater eventually returns to the surface for people, plants and animals to use until the cycle begins again.

Texas Horned Lizard

PHRYNOSOMA CORNUTUM

BECAUSE OF ITS WIDE BODY, FOLKS STILL CALL THIS CRITTER A "HORNY TOAD," BUT IT'S PURE LIZARD, THROUGH AND THROUGH. THIS THREATENED SPECIES LIVES IN AREAS SPARSELY COVERED WITH PLANTS, AND EATS ANTS, TERMITES, BEETLES AND GRASSHOPPERS. PESTICIDES AND NON-NATIVE FIRE ANTS, PLUS HUMAN ENCROACHMENT, HAVE THREATENED THE TEXAS HORNED LIZARD'S EXISTENCE.

DID YOU KNOW? ANCIENT CIVILIZATIONS REVERED THE CRITTER, PORTRAYING IT IN PETROGLYPHS, ON POTTERY AND IN SONG.



Stone Oak Park

PLEASE ENJOY YOUR TIME AT STONE OAK PARK AS YOU RESPECT NATURE. WE ASK THAT YOU LEAVE IT AS YOU FOUND IT, SO THAT OTHERS MAY ENJOY IT TOO.

- 1 TRAILHEAD
- 2 "SPIDER'S DARE" TRAIL
- 3 "SNAKE CHASE" TRAIL
- 4 INTERPRETIVE SIGNAGE
- 5 EXERCISE STATION
- 6 AMPHITHEATER
- 7 TRAIL NODE
- 8 PARKING
- 9 YOU ARE HERE!



