A photograph of San Pedro Creek, a narrow waterway flowing through a lush, green, overgrown area. In the foreground, several ducks are gathered in the water. The creek flows towards a concrete structure, possibly a bridge or a culvert, in the middle ground. In the background, a city skyline is visible under a clear blue sky, featuring a prominent skyscraper with a flag on top. Power lines and utility poles are also visible in the scene.

SAN PEDRO CREEK STUDY

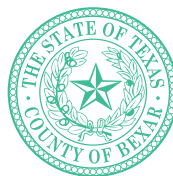
WESTSIDE CREEKS RESTORATION

SAN PEDRO CREEK STUDY

WESTSIDE CREEKS RESTORATION



SAN ANTONIO
RIVER AUTHORITY
Leaders in Watershed Solutions



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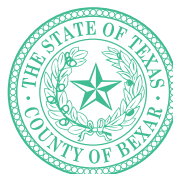
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EXECUTIVE SUMMARY

The scope and findings of the San Pedro Creek study are summarized as follows:

FEASIBILITY ANALYSIS CHARGE

FINDINGS

- Review site conditions - Property ownership, easements, roads, bridges, adjacent structures, topo and utilities.

- The right-of-way of the creek is limited to the existing channel walls and there are few drainage easements related to the creek surface channel.
- Verified the actual width and depth of the channel sections.
- The structural condition of the bridges is fair to good but their constrained clearances contribute to flood issues and prevent people from walking under them.
- Ownership and valuation of all adjacent properties has been identified based on Bexar Appraisal District values.
- Property acquisition and drainage easements will be essential to increase capacity of the channel to contain the 100-year floodplain and provide public walkways.
- No major impacts to existing underground utilities.

- Conduct an environmental site assessment and identify areas potentially impacted by threatened and/or endangered species.

- The Level 1 ESA did identify possible environmental concerns.
- A Level 2 ESA is recommended to further investigate these environmental concerns.
- No threatened or endangered species

- Conduct a cultural resources survey - In compliance with the Texas Antiquities Code and Section 106 of the National Historic Preservation Act

- The creek banks are mostly fill material.
- Shovel and trenching testing identified several sensitive sites and archeological monitoring during construction will be required.
- Report reviewed by the Texas Historical Commission and the additional standing structures survey is under review by CoSA.

- Review existing San Pedro Creek floodplain and create a hydraulic model of proposed project conditions.

- There is still a flood risk for public safety and property.
- The Corrected Effective 100-year Floodplain generally covers a larger area than the Effective FEMA 100-year Floodplain.
- The main causes are the limited width and depth of the existing channel and the constrained clearances of the majority of the bridges.

- Investigate the feasibility and cost of recirculating water through the San Pedro Creek Tunnel system.

- Water can be recirculated using the pumps in the San Pedro Creek Tunnel System.
- During wet periods base flow from San Pedro Springs can be diverted from the tunnel inlet to the creek by raising the water level in the sedimentation basin on the upstream side of the inlet structure.
- A bed and banks permit from the San Antonio River to San Pedro Creek is the most expedient means to secure make-up water.
- Make-up water from the SAWS recycle water system is possible but permitting and construction is much more difficult and costly.

- Architectural design and renderings of proposed concepts.

- Design Concept grounded in San Antonio's cultural landscape and Latino Urbanism

- Develop an Opinion of Probable Cost (OPC) for alterations to the existing San Pedro Creek infrastructure.

- A detailed preliminary Opinion of Probable Cost has been prepared.
- Construction costs are comparable with the costs of the San Antonio River Museum Reach



SCALE





SECTION 1 PROJECT OVERVIEW





BACKGROUND

The legacy of San Pedro Creek has often been overshadowed by the San Antonio River and its world renowned Paseo del Rio, but the creek has played a vital role in San Antonio's history. For nearly two centuries both the San Antonio River and San Pedro Creek sustained the civil settlement and growth of the city.

San Pedro Creek - Arroyo de San Pedro, was named by Fray Isidro Felix de Espinosa, the diarist of the 1709 Espinosa-Olivares-Aguirre expedition. On April 13, Espinosa recorded that the expedition arrived to a spring which was "bordered by many trees and with water enough to supply a town. It was full of taps or sluices of water, the earth being terraced." To the chiefs, their people, and their prehistoric predecessors, the springs and creek had been a life-giving source beyond memory. Archaeological remains attest to the fact that the springs were a favored place of hunters and gatherers for thousands of years. For the Spanish, Saint Peter (the person, not the creek) was the rock upon which their faith was founded; patron saint for fisherman, boat builders, and those whose livelihood centered on water. Claiming the waters for church and crown was no less important than the claiming the land.

In 1718, Martin de Alarcón, the governor of the Province of Texas returned to the springs with the expressed desire to establish a mission nearby. The expedition arrived on May 5th, and it was during this trip that the first civil and religious settlements were founded near the springs and creek: the Villa de Béjar and the Presidio de Béjar. A bit downstream from the springs, Mission San Antonio de Valero was established. This was the historic founding of San Antonio.

The presidio and mission would relocate downstream along opposite banks of the creek the next year. Mission San Antonio moved again nearer the San Antonio River but the presidio remained as the anchor for the fledgling Villa de Béjar and soon after the Villa de San Fernando. San Pedro Creek provided a reliable flow of water along the course of the stream and via a network of irrigation ditches that delivered water from the springs to households and fields.

These acequias were expertly engineered, laboriously dug, meticulously maintained, and operated by gravity. The first acequia originated at the eastern edge of the San Pedro Springs and coursed southeast approximately 1,308 feet, before entering the San Antonio River. It is assumed that it was to water the fields of Mission San Antonio de Valero. A second irrigation ditch connected to San Pedro Creek, the so called San Pedro Acequia, was begun in 1732 and it was to water the fields of the civilian settlement, the Presidio and the Barrio del Norte. The acequia flowed southward from the San Pedro Springs, between the river and the creek, and ended at the San Antonio River just before its confluence with San Pedro Creek.

In the mid-19th century San Antonio began to see an Anglo-North European influence on culture and commerce, and as San Antonio changed from an agricultural town to an industrialized city, so to did the use and treatment of the creek. In the mid-19th century, the use of the river, creeks, and acequias changed due to the ever growing population. The San Antonio River and San Pedro Creek were reserved for



ABOVE:
Lavandera, Theodore Gentilz
Untitled, Theodore Gentilz
Camp of the Lipans, Theodore Gentilz

OPPOSITE PAGE:
Portion of the Plano de la Villa y Presidio de S. Antonio de Veyar 1767 From a manuscript by Joseph de Urrutia, Reproduction by permission of the British Library Board (Note: San Pedro Creek is incorrectly identified as "Acequia para regadio" or regulated irrigation ditch)

Aerial View of San Pedro Creek at Santa Rosa Bridge



John Hill

Upper Labor

Miracle Chapel of Padre Juan Nunez de Castro

Very old adobes
Villa de San Fernando & Bexar
Est. 1731 by Canary Island colonists

San Antonio & Valero
Mission est. 1716
Alamo

Arsenal

Devile

Beautiful trees

Roosevelt Park

bathing and washing, whereas the acequia system provided the town's drinking water supply. The misuse of the acequia system as a waste disposal location and several cholera epidemics led to the need to develop a more sanitary way of obtaining water. By the end of the 19th century, San Antonio had its first water works.

During the 20th century the porciones and house lots were redeveloped with greater urban intensity and loftier architectural styles. In the immediate downtown center, the creek was bracketed by the new City Hall at Military Plaza and the new Market House at Market Plaza. Two, three, four-story buildings rose near and along the banks of the creek in revival Italianate, Second Empire, and Neo Gothic designs. As the city expanded outward through the creek's watershed the incidence and magnitude of flooding increased. San Pedro Creek was no a longer life-giving resource, but a life-threatening hazard.

Thus the creek was channeled, deepened, straightened, and in some places entirely covered over. Most of this work occurred in the first part of the 20th century with the most severe restructuring of the creek occurring south of downtown by the Missouri Kansas Texas Railroad. The rail lines displaced and narrowed the stream from South Alamo Street to El Paso Street, where it was channeled with concrete box culverts under the rail yard. Through downtown most of the creek was left open with channel walls constructed of large roughly squared and coursed rubble limestone. North of downtown the creek was treated more as a linear parkway as Camaron and Laredo Streets converged parallel to its banks. The relatively ample width served as a both neighborhood park and motor parkway from Martin Street to Five-Points well into the 1950's when West Side Expressway and ultimately IH 10 obliterated any sign of its existence.

The creek also acted as a convergence point of many paths into and out of San Antonio. Travelers followed along the routes of the Caminos Reales, the 18th century "royal highways" that converged on the city from all directions. The Five Points area along San Pedro Creek, at one time called the Pasito de los Apaches, saw much traffic by way of mule train, stage coach, freight lines, cattle drives, and later trolleys. The area was a convergence of commerce and culture. San Pedro Creek acted as a social, cultural, and economic barrier between Anglo and Hispanic San Antonio. This condition persisted through much of the 20th century and though it has been presently overcome by other means, it is still a living memory for many.

It is perhaps the unresolved and compounded negativity that has so affected the decline of San Pedro Creek. The coup de gras was the construction of the flood bypass tunnel that necessarily eliminated the risk of catastrophic flood but also diverted the natural flow of the springs from the downtown reach of the creek. The tunnel is and will continue to be an essential and substantial asset in San Antonio's water management infrastructure, but in downtown the creek is indeed little more than a drainage ditch.

Yet life clings to the smallest of the creek's margins: aquatic plants, fish, turtles, birds. People pause at the bridges and look for its meaning. Its history is obscured, but not wholly forgotten and for the most part never fully investigated. However altered and constrained, San Pedro Creek still remains a significant and unrealized part of San Antonio's urban and cultural landscape.



ABOVE:

San Pedro Creek from Houston Street

Lavandera on the Westside San Antonio

Durango Street Bridge

OPPOSITE PAGE:

Portion of the Historic Guide Map to San Antonio de Bexar and environs, Drawn by Emily Edwards 1926, Published by San Antonio Conservation Society.

PROJECT BOUNDARIES

The San Pedro Creek Restoration Project scope courses one and a half miles through the heart of San Antonio’s historic City Center. The Project limit starts at the northern point at the bypass tunnel inlet next to Fox Tech High School and ends at the South Alamo Street Bridge next to the City of San Antonio Development Services Building. Notwithstanding the potential for positively effecting adjacent civic space and private properties, the scope of the study is primarily focused on the creek within its current ROW and easements and is typically delimited by the existing channel walls.

Given that future improvements need to include both the effective passage of water without flooding and the safe and pleasurable movement of people along its course, it is clear that the current ROW and easements can not accommodate the demand for either flood control or pedestrian trails.

This study therefore assumes that acquiring additional ROW or easement will be a basic strategy for making the necessary improvements for public safety and quality of life. The potential costs of acquisition would be significant, but more so the benefit to adjacent properties, Downtown and the greater community.

 Project Boundary



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KINGSBURY

FLORES

MARTIN

CAMARON

PECAN

SALINAS

TRAVIS

SANTA ROSA

HOUSTON

COMMERCE

DOLOROSA

NUEVA

SANTA ROSA

OLD GUILBEAU

GRAHAM

CESAR CHAVEZ

SANTA ROSA

FLORES

ARSENAL

GUANAJUATO

SHERIDAN

CAYO

SALAMO

SCALE

0 FT 250 FT 500 FT 1000 FT



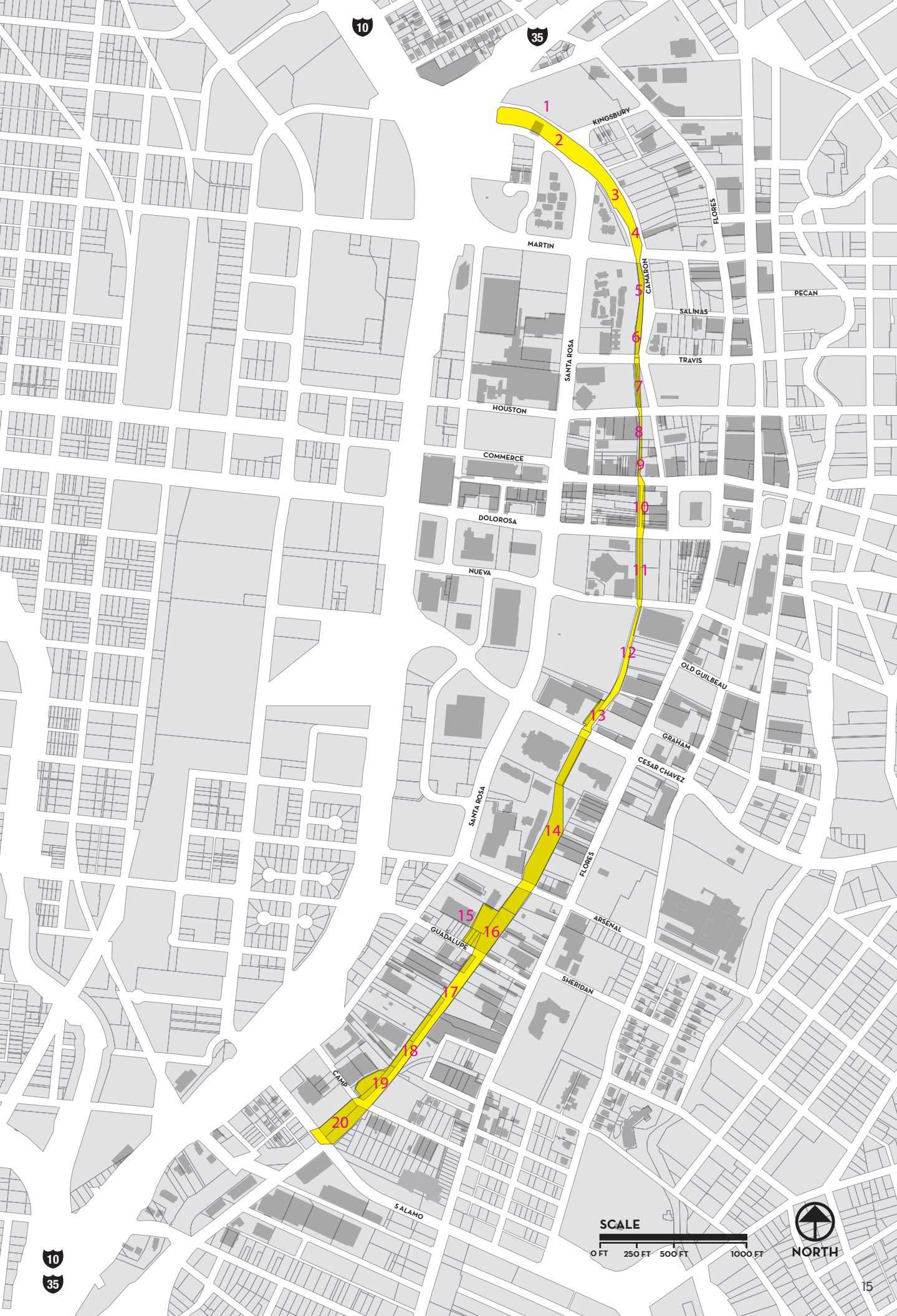
NORTH

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EXISTING CHANNEL CONDITIONS

Bypass Tunnel Inlet Structure	1
10' wide concrete bottom with 3' high concrete channel walls and sloped earth banks	2
10' - 20' wide earth bottom with earth banks	3
20' wide concrete bottom with 6' high stone east channel wall and 6' to 12' high stone west channel walls	4
20' wide concrete bottom with 6' - 8' high stone channel walls	5
20' wide concrete bottom with 6' to 8' high stone channel walls	6
20' wide concrete bottom with 10' high concrete channel walls	7
17' wide concrete bottom with 8' high stone east channel wall and concrete west channel wall	8
15' - 17' wide concrete bottom and 6' wide culvert with 8' high stone channel walls	9
20' wide concrete bottom with 10' high stone channel walls and contiguous building foundation walls west bank.	10
20' wide concrete bottom with 10' high stone channel walls	11
20' wide concrete bottom with 10' high stone channel walls	12
20' wide concrete bottom with 10' high stone channel walls	13
Four 11'x11' cast-in-place concrete box culvert	14
Bypass tunnel outlet structure	15
30' - 50' wide concrete bottom with 13' high concrete channel walls	16
30' wide concrete bottom with 13' high concrete channel walls	17
Three 10'x12' cast-in-place concrete box culvert	18
30' wide concrete bottom with 13' high concrete channel walls	19
Trapezoidal graded section with earthen banks	20



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SCALE

0 FT 250 FT 500 FT 1000 FT



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BRIDGES & CULVERTS

The structures that are rated as 7 or 6 require some minor repairs but are generally regarded as being in good or satisfactory condition. However, five of the bridges are rated as 5 or 4 which is considered to be in fair or poor condition. These bridges require more extensive repairs in order to advance them back toward their original load rating.

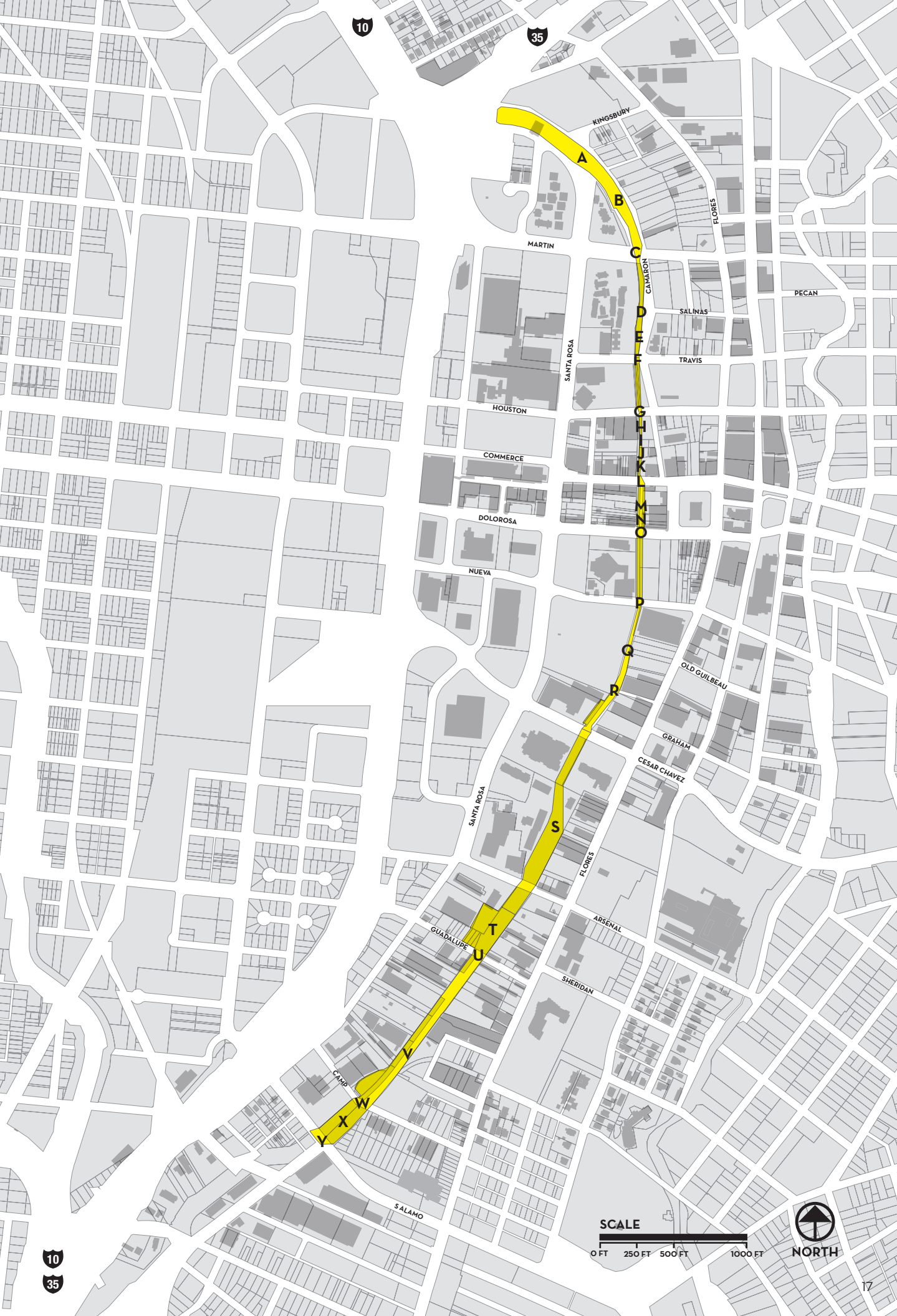
CONDITION RATING SCALE

The structural evaluation utilizes the TxDOT Condition Rating Scale:

- 0 Failed condition - bridge closed and beyond repair
- 1 Failing condition - bridge closed but repairable
- 2 Critical condition - bridge should be closed until repaired
- 3 Serious condition - deterioration seriously affects structural capacity
- 4 Poor condition - deterioration significantly affects structural capacity
- 5 Fair condition - minor deterioration of structural elements (extensive)
- 6 Satisfactory condition - minor deterioration of structural elements (limited)
- 7 Good condition - some minor problems
- 8 Very good condition - no problems noted
- 9 Excellent condition

RATING SUMMARY OF BRIDGES & CULVERTS		RATING	pedestrians walk over or under
A	Santa Rosa St Bridge	7	over
B	Channel Section between Santa Rosa St & Martin St	7	n/a
C	Martin St Bridge	6	over
D	Bridge near Salinas St (Closed)	4	n/a
E	Channel Section between Salinas St & Travis St	6	n/a
F	Travis St Bridge	6	over
G	Houston St Bridge	7	over
H	Alameda "Fire Escape"	6	n/a
I	Parking Lot Bridge (Closed)	4	n/a
J	Depressed Bridge	6	n/a
K	Channel Section between Depressed Bridge & Commerce St	6	n/a
L	Commerce St Bridge	7	under
M	Parking Lot Bridge (Open)	6	n/a
N	Bridge to Carter Building	5	under
O	Dolorosa St Bridge	4	under
P	Nueva St Bridge	4	under
Q	Channel Section between Nueva St and Graham Ave	7	n/a
R	Graham Ave Bridge	7	under
S	Culvert from Cesar Chavez to beyond El Paso St	7	n/a
T	Channel Section between Guadalupe St Bridge & Guadalupe St Culvert *	7	n/a
U	Guadalupe St Bridge *	7	under
V	Culvert between Guadalupe St and Camp St *	7	n/a
W	Camp St Bridge *	7	under
X	Channel Section between Camp St and Alamo St	7	n/a
Y	Alamo St Bridge	6	under

* Highlighted structures indicate imminent repair.



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KINGSBURY

A

B

FLORES

MARTIN

C

CALMARON

PECAN

SALINAS

TRAVIS

SANTA ROSA

D

E

HOUSTON

COMMERCE

DOLOROSA

NOUEVA

F

G

H

I

J

K

L

M

N

O

P

Q

OLD GUILBEAU

GRAHAM

CESAR CHAVEZ

SANTA ROSA

R

S

FLORES

ARSENAL

GUADALUPE

SHERIDAN

T

SANTA ROSA

U

CAMP

V

X

W

SALAMO

SCALE

0 FT 250 FT 500 FT 1000 FT



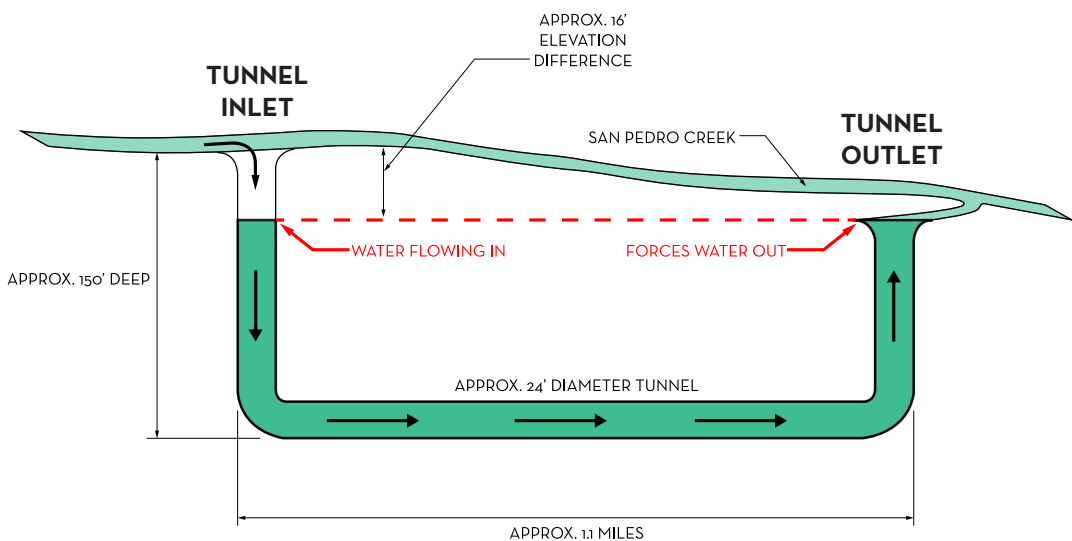
NORTH

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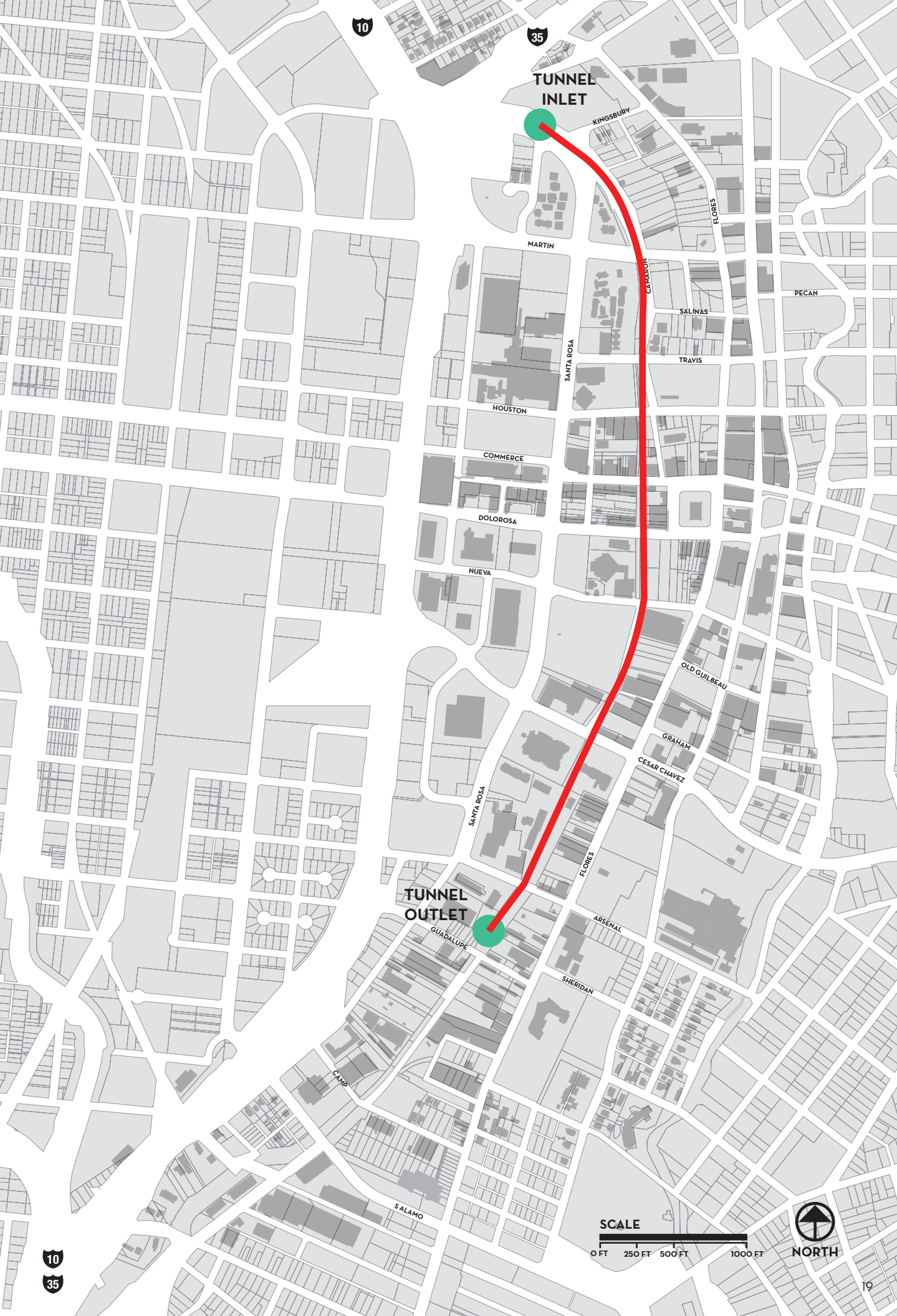
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SAN PEDRO CREEK TUNNEL SYSTEM

The San Pedro Creek tunnel was designed to divert a major portion of the 100 year storm floodwater beneath downtown San Antonio and release it into San Pedro Creek upstream of Guadalupe Street. The tunnel is a 24 feet 4 inch diameter inverted low head siphon located approximately 150 feet below the ground surface and for the most part is located under existing public right-of-ways. The tunnel consists of an intake structure located west of Fox Tech High school, horizontal tunnel (6,060 feet), maintenance shaft and outlet structure located upstream of Guadalupe Street.



FLOOD FLOW SCHEMATIC



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TUNNEL INLET

KINGSBURY

FLORES

MARTIN

SANTA ROSA

CAMARON

SALINAS

PECAN

TRAVIS

HOUSTON

COMMERCE

DOLOROSA

NUOVA

SANTA ROSA

OLD GUILBEAU

GRAHAM

CESAR CHAVEZ

TUNNEL OUTLET

GUADALUPE

FLORES

ARSENAL

SHERIDAN

CAMP

SALAMO

10
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SCALE

0 FT 250 FT 500 FT 1000 FT



NORTH

HYDROLOGY & HYDRAULICS

The completion of the San Pedro Creek bypass tunnel in 1996 reduced the risk of catastrophic flooding by diverting the upstream storm flow into the tunnel at the inlet structure. This 24' 4" diameter concrete tunnel lies more than a hundred feet underground and releases its flow at the outlet structure near Guadalupe Street. The tunnel actually functions as a siphon as it can hold about 22 million gallons and is capable of recirculating the water between the two tunnel structures. There is no official or anecdotal record of flooding since the completion of the bypass tunnel.

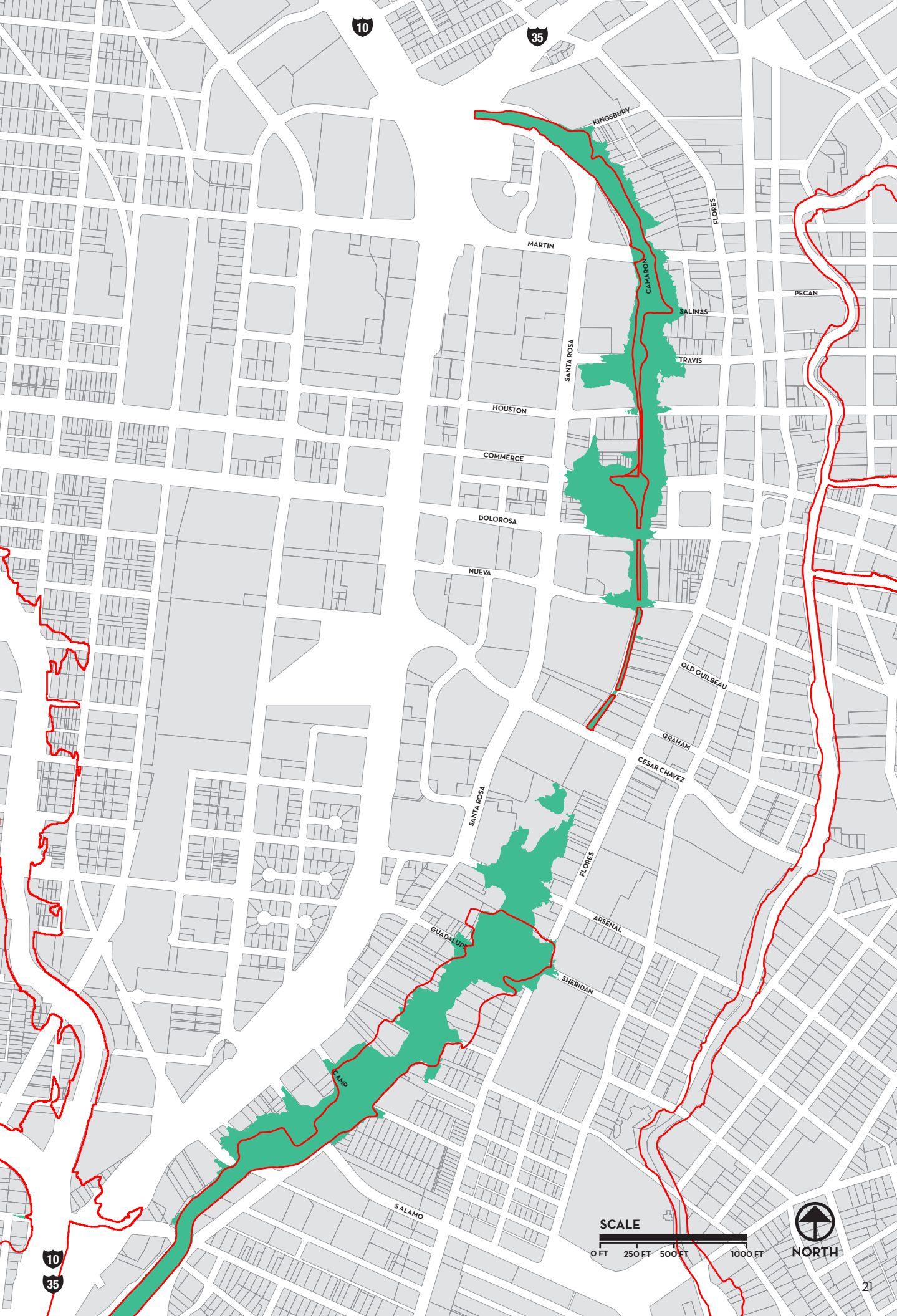
In the due diligence of this study however, it was discovered that the current FEMA 100-year floodplain was based on an assumed channel section width of 30 - 54 feet. This width only occurs in a portion of the creek that courses through an underground culvert between Cesar Chavez Blvd. and the outlet structure. The open channel elsewhere varies from 20' to 28' in width and thus does not correlate with the current H&H model.

Using the actual dimensions of the creek channel, the flood character of the creek was modeled and demonstrated that the flood risk from the localized watershed (downstream of the tunnel inlet) still poses a significant risk. The strategy for reducing the effective 100-year floodplain to a manageable level is to reconstruct bridges at critical low and narrow choke points; and to deepen and/or widen the channel.

The H&H map illustrates the existing San Pedro Creek floodplain and creates a hydraulic model of proposed project conditions. This provides the metrics necessary for developing the concepts relative to maintaining/enhancing flood control, design, and ecosystem restoration. The study also addresses the feasibility and cost of recirculating water through the San Pedro Creek tunnel system.

 Corrected Effective Floodplain

 FEMA 100-year floodplain



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KINGSBURY

FLORES

MARTIN

CAMARON

PECAN

SALINAS

TRAVIS

SANTA ROSA

HOUSTON

COMMERCE

DOLOROSA

NUEVA

OLD GUILBEAU

GRAHAM

CESAR CHAVEZ

SANTA ROSA

FLORES

GUADALUPE

ARSENAL

SHERIDAN

CAMP

SALAMO

SCALE

0 FT 250 FT 500 FT 1000 FT



NORTH

10
35

CULTURAL RESOURCES SURVEY

The cultural resources survey showed that the creek bank consists of mostly fill material. Shovel testing and backhoe trenching were also undertaken which identified several sensitive sites along the bank. Results indicate that archeological monitoring during construction will be required during the next phase. The cultural resources survey report was reviewed by the Texas Historical Commission; an additional standing structures survey is currently under review by the City of San Antonio.

TRENCH AND SHOVEL TEST LOCATIONS

- NEGATIVE SHOVEL TEST
- POSITIVE SHOVEL TEST
- NEGATIVE TRENCH
- POSITIVE TRENCH



10

35

KINGSBURY

CAMARON

FLORES

MARTIN

PECAN

SALINAS

TRAVIS

SANTA ROSA

HOUSTON

COMMERCE

DOLOROSA

NUEVA

OLD GUILBEAU

GRAHAM

CESAR CHAVEZ

SANTA ROSA

FLORES

ARSENAL

GUADALUPE

SHERIDAN

CANAL

SALAMO

SCALE

0 FT 250 FT 500 FT 1000 FT



NORTH

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35



SECTION 2 CONCEPT DESIGN



CONCEPT DESIGN

Driven by the need to forge a stronger bond between people and water, retain historical and environmental context while addressing San Antonio's 21st century water issues, we're challenged by a dense and at times unyielding urban envelope, with extraordinary possibilities. We view the creek as a garden, a healing composite of living offerings that with great thought and care, will nourish us for years to come. By listening to the language of San Pedro Creek, its story will be shared via art and cultural components unique to our city.

Many times mistaken for a drainage ditch, modest San Pedro Creek continues to nestle deep in the historic heart of downtown San Antonio. In attempt to reconstitute its life-giving qualities, reflect on its rich history and create a sense of place, its primary purpose as a flood control safeguard must be emphasized. Numerous studies and research illustrated that the flood character of the creek still posed significant risk from the localized watershed (downstream of the tunnel inlet.)

Simultaneously segregating and aggregating, San Pedro Creek possesses a rich and beautiful story, a reflection of the many points in which it traverses. By drawing upon the character of place, it is possible to celebrate these individual components and establish a sequence while integrating them into a whole. To capture and restore San Pedro Creek's tremendous potential, we look to Latino Urbanism to help tell the story.

DESIGN GOALS

Contain the 100-year floodplain within the San Pedro Creek banks.

Reimagine the creek as a linear urban park and continuous playspace for San Antonians working, living, and visiting the Center City.

Advance urban watershed and water quality management practices, ensuring the safety and sustainability of our biotic habitats.

Enhance and catalyze cultural and economic revitalization opportunities by reconnecting the creek with people, the urban core and articulating 'quality of life' value.

LATINO URBANISM

Latino Urbanism in essence, is a blend of renewed emphasis on building community deciphered in the language of a new America. Blurring the lines of indoor and outdoor, Latino Urbanism synthesizes the common and the exquisite. It renders spaces warm, engaging and celebrates shared public space and connection. Emphasizing the supremacy of solids over voids and a generous use of pattern, it encourages the strategic use of shade, small pocket spaces and gathering spots in San Pedro Creek.

Giving voice to San Pedro Creek via Latino Urbanism helps us re-think, re-cycle and re-use everyday materials that may not appear architectural at first glance, but have been used in an architectural manner in communities with very modest means for generations.

San Pedro Creek's past, present and future inspires celebration of our traditions of culture, craft and elevation of the common. Yielding both comfort and delight, it pushes us to strive for more with less, yet still preserve the goals of maintaining a strong cultural and historical response to the design challenge 'El Arroyo' poses.

By incorporating Latino Urbanism into our dreams of San Pedro Creek, it provides us with a tool to shape this blended identity and gives birth to a physical representation of cultural anthropology. Employing Latino Urbanism's Mestizaje (a blend) into San Pedro Creek honors both its sacred traditions and its everyday life. Embedded with remnants of our history and ecosystem, San Pedro Creek's restoration will emerge layered in the manner of contemporary culture, serving as a modern 'codex' - an ancient tool used to accumulate history and document it for posterity.



DESIGN PRINCIPLES



Establish an intimate scale relationship between people and the creek, and provide for the simultaneous movement of water and people that is safe and pleasurable.

One of San Pedro Creek's biggest assets is its intimacy. As a linear pocket park, its scale allows a more personal connection encouraging a vibrant, sustainable and inspiring connection to the water. Creating places that offer fresh air not only help encourage movement along the creek, but help ignite bonding. Whether walking the trail, pushing a stroller or wheelchair (and perhaps even someday a kayak) with such an amenity, development will certainly follow.



Restore, repurpose, and reuse the existing channel infrastructure, respecting its historical context and being good stewards of the funds provided for restoration.

The San Pedro Creek has long nourished the city with its acequia-fed waters, but exists now as a mere shadow of itself - a concrete ditch. Design concepts have been developed to reuse as much of the existing creek infrastructure as possible, thinking sustainably, keeping components intact, and rethinking their role in the way the creek unfolds. This is not only a thoughtful and 'green' way to proceed, it respects the historical context and allows the creek to be good stewards of the funds provided for restoration.



Recreate an aquatic habitat to nourish life and incorporate nature into our urban environment.

With the opportunity to refresh the waters and accompanying native and adaptive plant life, the San Pedro Creek restoration provides another way to bring nature into the urban environment. San Antonio's interest in nature is blossoming, thanks to a renewed appetite for health and wellness. By incorporating more nature into urban environments, supporting and restoring the local ecosystem results in a greater quality of life.



Celebrate San Pedro Creek's Layered History by Telling its Story with an Authentic Voice.

San Antonio's evolution and its gradual melding of cultures over hundreds of years, San Pedro Creek has touched lives in numerous ways. Revered as a life source (for drinking and assisting in irrigation) as well as providing direction for settlement, the creek eventually ceased in bringing lives together and eventually resulted in segregating them, emerging as a dividing line between Anglo and Hispanic San Antonio. Returning its healing spirit and ability to unite the community is part of the Creek's legacy.

Provide places that support diverse activities, offer pockets of surprise and connect with intersecting streets, paths, and transportation routes.

Well-designed public spaces invite people to gather and bond in meaningful ways; San Pedro Creek will reflect the traditions of public plazas in Latin America and Europe. San Pedro Creek will offer pockets of design surprise, perfect for people-watching, strolling, conversations and enjoyment of special performances. Providing nodes of activity (people magnets) also paves the way for changing the social fabric, inspires linkages encourages pedestrian intersection with aligning areas.





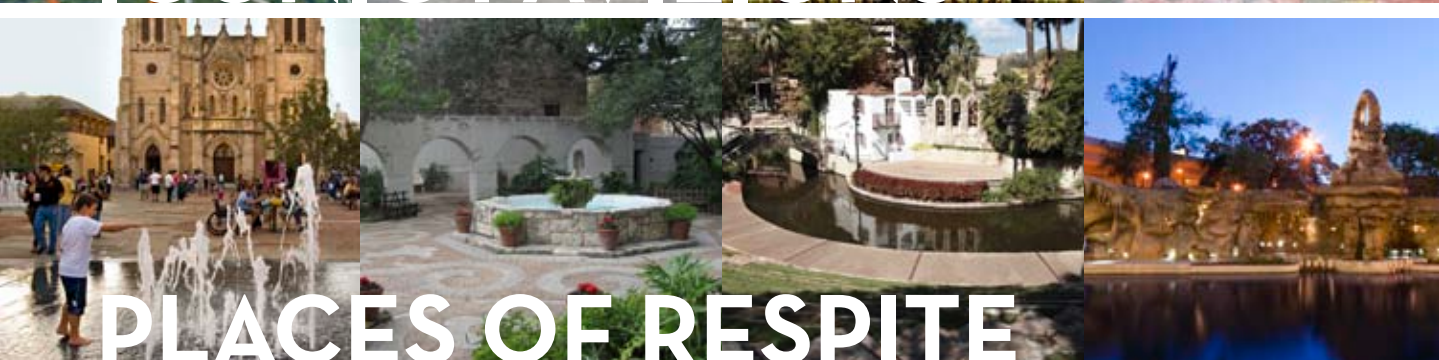
SPLENDID PASEOS



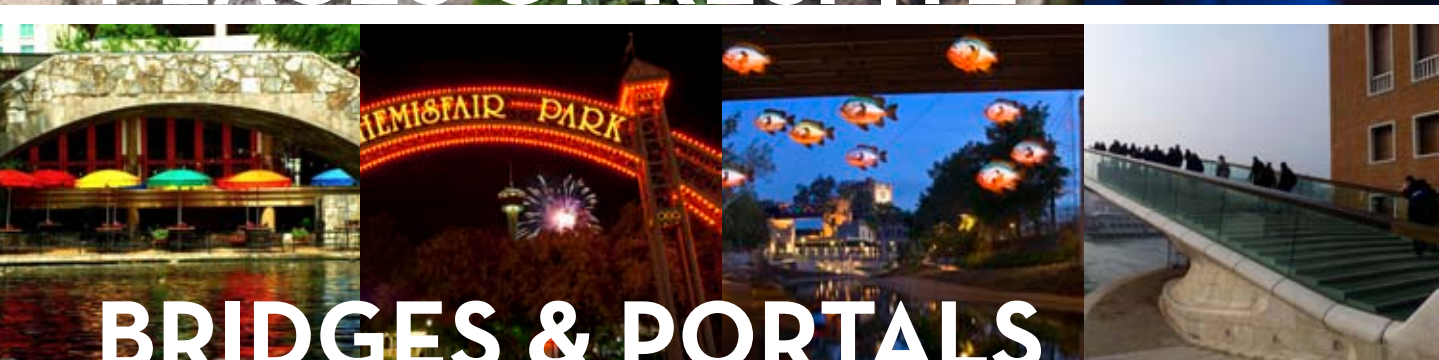
RIBBONS OF LIFE



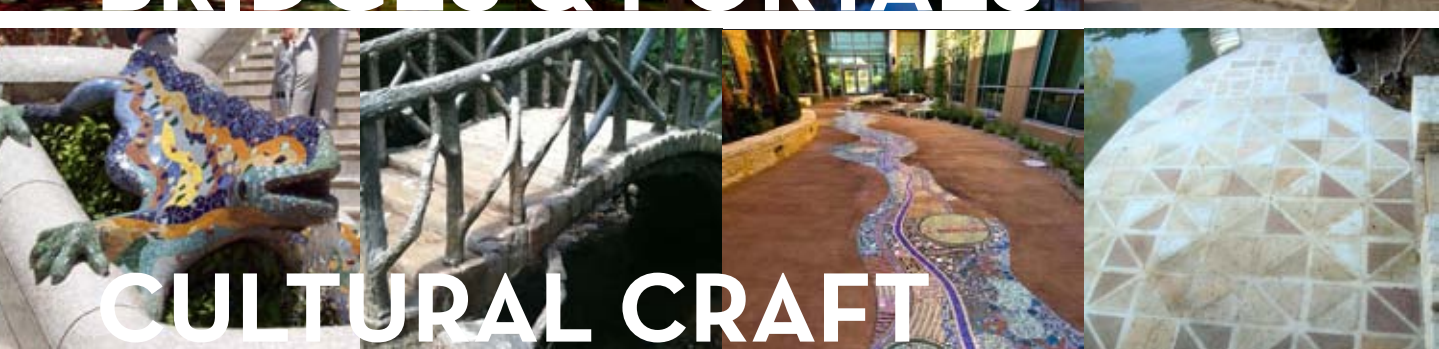
ICONIC PAVILIONS



PLACES OF RESPITE



BRIDGES & PORTALS



CULTURAL CRAFT

DESIGN PATTERNS

San Antonio possesses a unique set of design components and iconic patterns. Together, these design components share a timeless ‘pattern language’ which articulates who we are and tells the story of our urban and park landscape.

SPLENDID PASEOS

The fully accessible paseo will embrace culturally diverse craft and detail along two walkways: one at the low bank and one at street level. Their braided routes will be an inviting, safe and shady environment and their width will allow the leisurely movement of people including strollers and wheelchairs, as well as joggers and cyclists. As an instructive antecedent, the Paseo del Rio is an internationally renowned urban waterscape uniquely San Antonian. Local models of exemplary urban walks however are rare, the best being the Tower Allee in Hemisfair Park and the historic Alameda: San Antonio’s first urban streetspace.

RIBBONS OF LIFE

The predevelopment conditions of San Pedro Creek cannot be restored, but with creative engineering the biotic quality of the creek can be reconstituted with a series of aquatic and riparian planting areas. Because even the new channel will be confined, these planting areas will be relatively long and narrow zones of habitat that support essential species, improve water quality, and stimulate human senses.

ICONIC PAVILIONS

Whether humble or grand, pavilions are pivotal park features to shelter people and activities. Classic examples are the Joske Pavilion in Brackenridge Park and the Japanese Gardens pavilion. San Pedro Creek needs similar sheltered spaces for public picnic, performance, play, art; and establish hubs of activity. The pavilions also constitute the only formal building type within the boundaries of the creek, and thus the architecture should express their unique context, character of use, and role as community landmarks.

PLACES OF RESPITE

Streets, sidewalks, paths and transit lines will cross the course of the creek and paseos, so it is important that these intersections modulate movement and orient people to varied destinations. The extreme linearity of the creek also needs a series of elements for visual and physical relief that occur more frequently and of more intimate scale than the pavilions. An appropriate mix of benches, picnic shelters, pet waystations, public restrooms, historic site interpretations, art installations will make San Pedro Creek a functional park for recreation and respite in the urban realm.

BRIDGES AND PORTALS

The bridges spanning San Pedro Creek are generally bereft of any design features such as those bridges spanning the San Antonio River. Many of the bridges will have to be replaced or altered to resolve flood and accessibility problems anyway, and by their nature and cost all bridges are consequential and so to their design character. The concept suggests that the bridges embrace a sense of remembrance, *puentes de recuerdo*, to provide an historical and cultural basis for design and public art. The mile and a half course of the creek through the Center City also ends at the northern and southernmost points of access from the Westside expressways. These entrances to downtown and San Pedro Creek should indeed be gateways, or *portales*, that through their design provide a memorable experience.

CULTURAL CRAFT

We imagine telling the story of San Pedro Creek as a codex; a layered timeline of historical context articulated through visual art and craft unique to San Antonio. By using techniques like faux bois concrete, mosaic, sculpture, we retain an authentic voice. Building facades, lobbies, landscape amenities and surrounding spaces – whatever San Pedro seeks or influences, it is a given that cohesion and expression are the goal. Additional gathering and learning spaces promote creative interaction within the community and also stimulates economic development of the neighborhood.



CHARACTER AREAS

For nearly all of its mile and a half length, San Pedro Creek courses between parallel retaining walls constructed of stone masonry or concrete. Although there are slight variances of width and materials, the overall character is that of a utilitarian drainage ditch regardless of the surrounding urban character. The surrounding urban character is actually quite diverse from north to south in form, function and character. This was seen as an opportunity to change the ditch-like character of the creek as it courses through the urban landscape. Six areas have been identified that are physically, historically, and culturally distinct from one another.

The northernmost area is *Villa Lagunilla - Town Lake*; which exploits the relatively generous ROW that exists along Camaron Street, and is envisioned as a modest impoundment from the inlet structure to Travis Street.

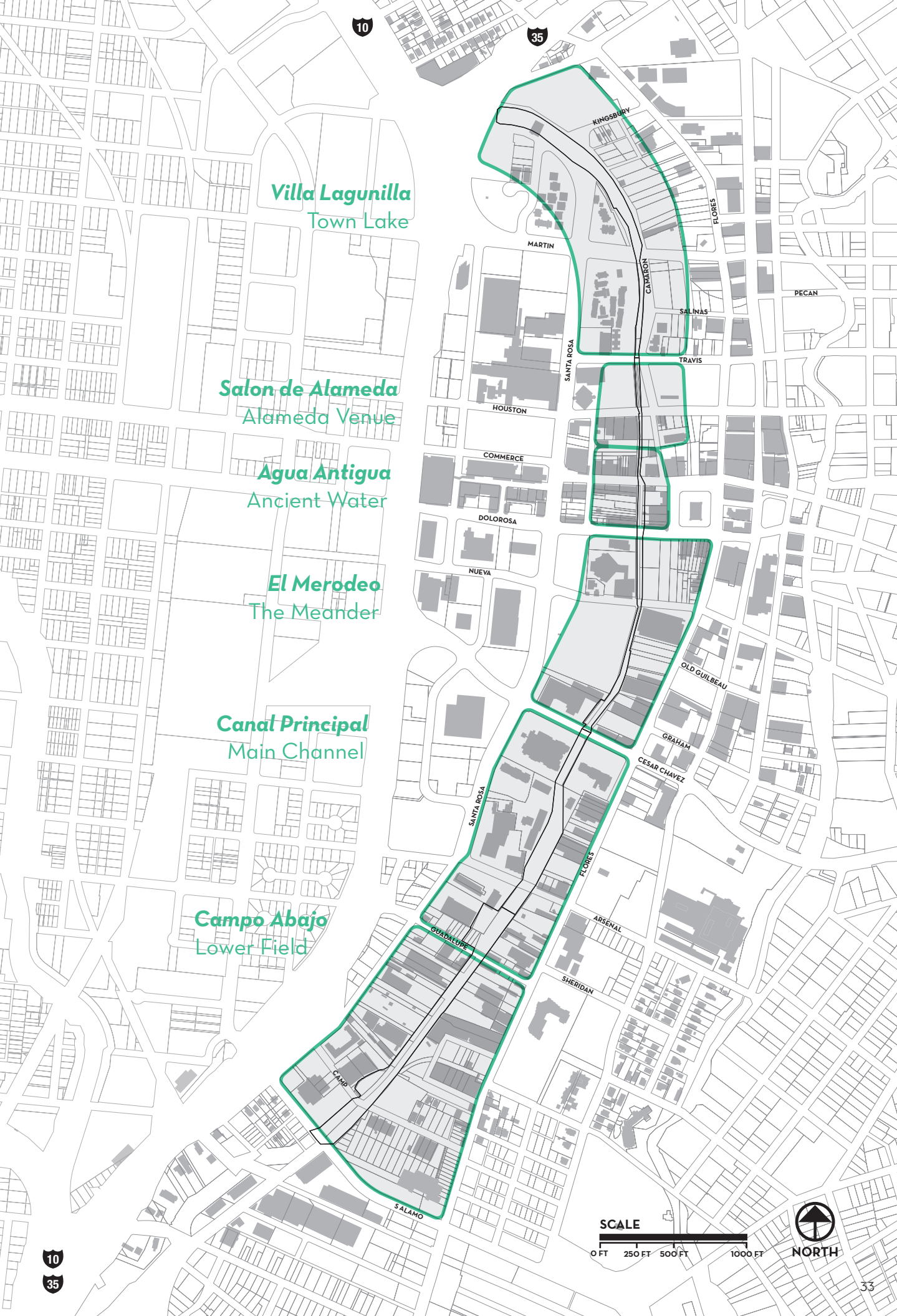
Immediately downstream lies *Salon de Alameda - Alameda Venue*; so named for the presence of the Alameda Theatre and opportunities for enlivening the creek as a performance venue.

Agua Antigua - Ancient Water; adjoins the Salon de Alameda and courses through the most historic part of the City Center. San Pedro Creek formed a defensive barrier along the west edge of the Presidio de Bejar and the patio of the Spanish Governors Palace abuts the creek at Calder Street.

The site design of the U.S. Courthouse has made allowance for altering the creek so a portion of its course can meander from Nueva Street to Graham Street. *El Merodeo - The Meander*; extends this idea by altering the course between Dolorosa Street and Nueva Street to swing in to the City property along the east bank. This is the only substantial area in all of the City Center where the creek will feel more like a natural stream and provide some relief to the otherwise straightedge course.

The historic Acequia Principal that carried water from San Pedro Springs for irrigation during the 18th and 19th centuries coursed parallel along the east bank of the creek. In this area the creek has been diverted into an underground concrete culvert from Cesar Chavez to the outlet structure. One of the design strategies is to open up the culvert but retain its basic structure. *Canal Principal - Main Channel*; anticipates a highly structured environment for the creek and paseo that will nevertheless be quite different from other sections of the creek.

Campo Abajo - Lower Field; is so named for the historic porciones that were cultivated in the 18th and 19th centuries. The area is an emerging arts district, centered on the Camp Street Lofts and future development of a contemporary arts museum.



Villa Lagunilla
Town Lake

Salon de Alameda
Alameda Venue

Agua Antigua
Ancient Water

El Merodeo
The Meander

Canal Principal
Main Channel

Campo Abajo
Lower Field

SCALE

0 FT 250 FT 500 FT 1000 FT



EXISTING AERIAL



6

1

2

3

5

4

8

7

MARTIN

9

10

SANTA ROSA

11

TRAVIS



NORTH

VILLA LAGUNILLA TOWNLAKE

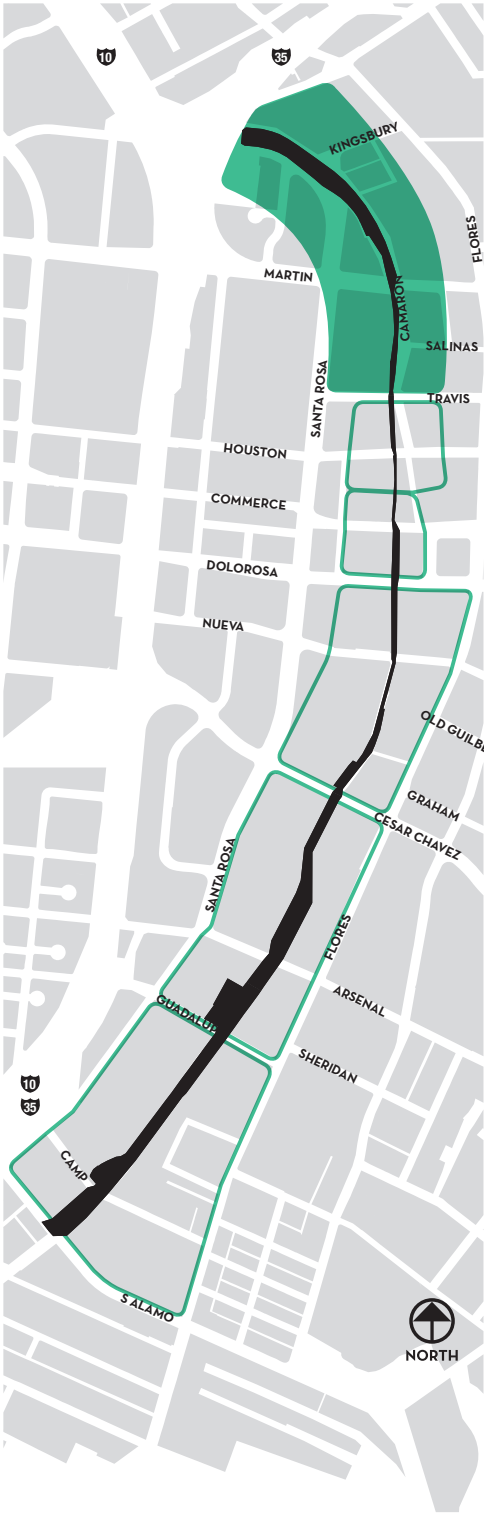
Imagining a small town lake as a neighborhood park for downtown residential growth and a blossoming creative class, Villa Lagunilla offers physical and visual respite, movement, and anchors an expanded riparian habitat.

This northernmost reach begins at the tunnel inlet structure and ends downstream at Travis Street. It is the only area along the creek that feels park-like because of its grassed margins and trees. Historically it was part of two of the earliest suburbs of Villa de San Fernando: Barrio Del Norte on the east and Laredito on the west.

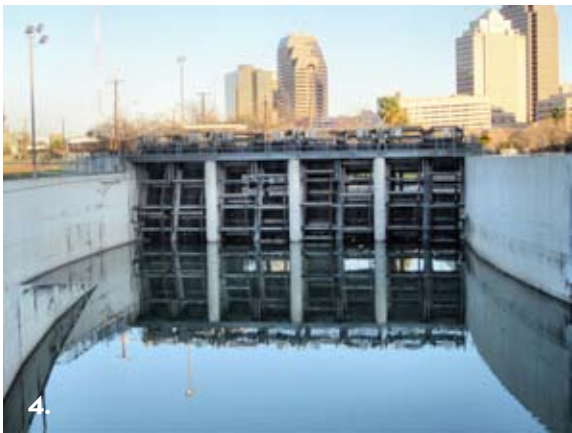
The first acequia for the presidio originated at San Pedro Springs and would have required a diversion dam to charge the ditch on the east bank. The Laredito acequia, located further south on the west bank of the creek would have required a similar structure. Camaron Street was initially a trail connecting the Presidio to San Pedro Springs and so-named for the fresh water shrimp that once flourished in the creek. Laredo Street originally extended north and converged in the area of the tunnel inlet structure, which was historically a fordable watering place for travelers following the Camino Real á San Agustin de Laredo.

Early settlement consisted of cultivated porciones and small homesteads; the Celso Navarro House (relocated to the Witte Museum) once stood where the Fox Field is now. Later development brought in industrial enterprises such as Menger Soapworks and institutions like Main High School (Fox Tech), the Robert B. Green County Hospital and the International Institute. In the late 19th century Italian immigrants resettled and developed the northwestern portion of the area. The community known as “Little Italy” was centered on the St. Francis of Assisi Catholic Church and Franklin Square, now Columbus Park. Even with urban encroachments the area was noted for its “old adobes” well in to the 1950’s.

The first attempts to channelize the creek likely took place between 1915 and 1916 in connection to the establishment of the Katy MKT Railroad. During the 1920s, the northern portion of the creek between Laredo and Camaron Streets developed as a greenway. It was a beloved park space for the neighborhood. The couplet was later improved as the Westside Highway and the creek ultimately buried in a culvert between Elmira Street and Five Points during the construction of IHIO.



1. Sedimentation Basin
2. San Pedro Creek Tunnel Inlet Structure
3. St. Francis of Assisi Catholic Church
4. Columbus Park (Franklin Square)
5. Town Square Apartments
6. Fox Tech HS Athletic Field
7. Fox Field (historic site of the Navarro House)
8. Soapworks Apartments phase II
9. Menger Soapworks historic building
10. Soapworks Apartments
11. Santa Rosa Hospital



VILLA LAGUNILLA TOWNLAKE

1. Inlet structure looking North
2. Creek at SoapWorks
3. Camaron St. looking North
4. Inlet structure looking South
5. Creek South of inlet structure
6. View from Santa Rosa Bridge looking South

This reach is now predominated by low-rise apartments along the west bank and on the east by Fox Tech High School athletic facilities, rear commercial service yards and surface parking lots. A handful of modest single-family houses remain on Kingsbury Street. The area is prime for redevelopment with increased urban density, so diminishing the floodplain and creating a park space can significantly increase quality of urban life and value of revitalization.



CONCEPT PLAN A/B

SEDIMENTATION BASIN

INLET
STRUCTURE

VIEW

SECTION A

HIGH BANK
PASEO

MARTIN

SANTA ROSA

SALINAS

CAMARON

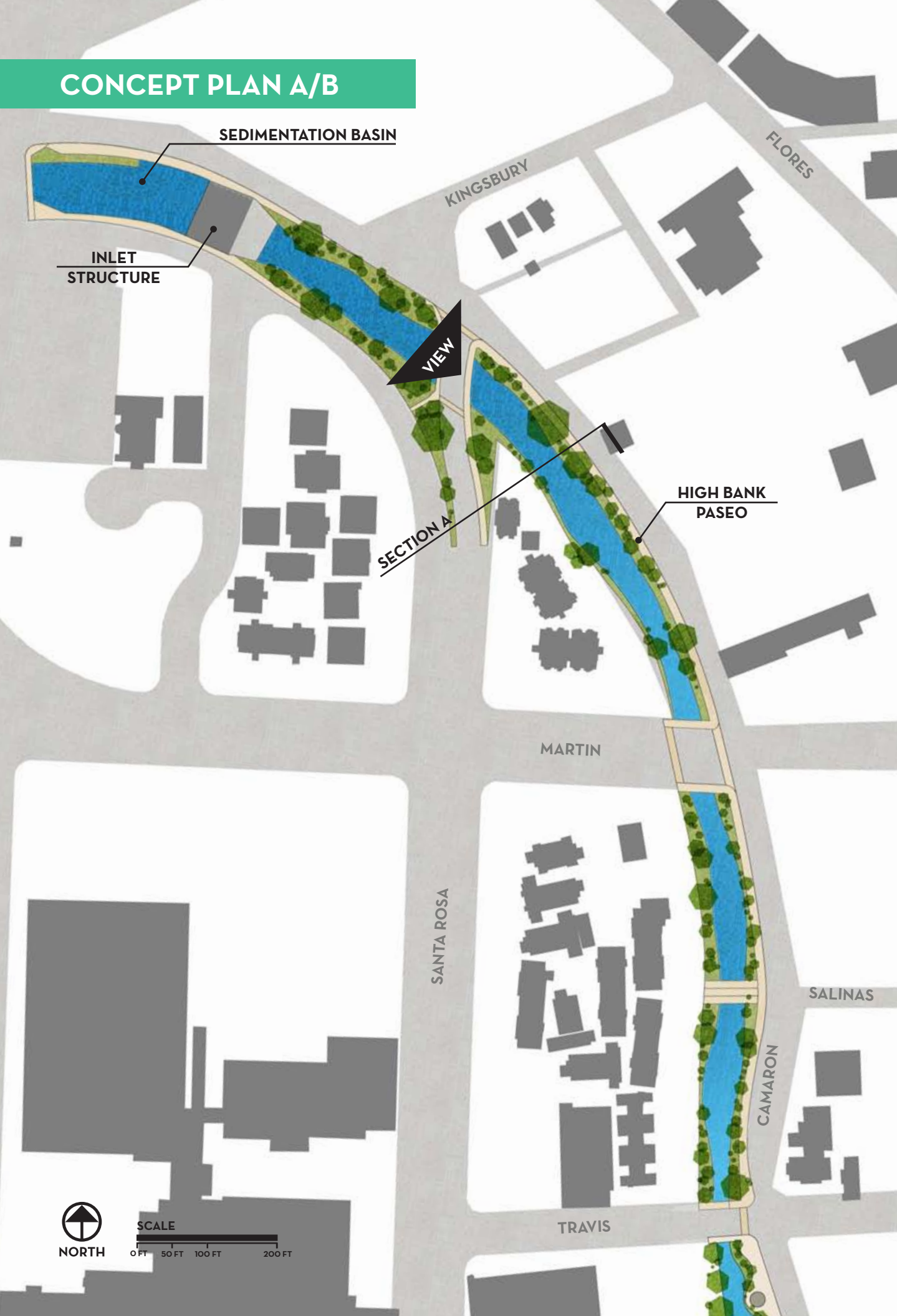
TRAVIS



NORTH

SCALE

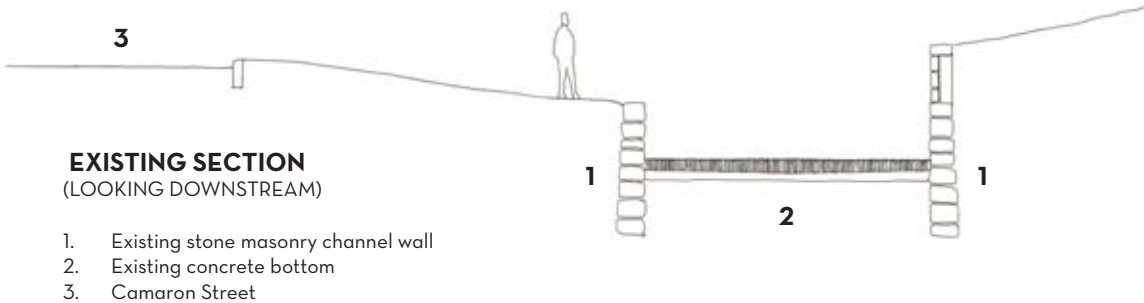
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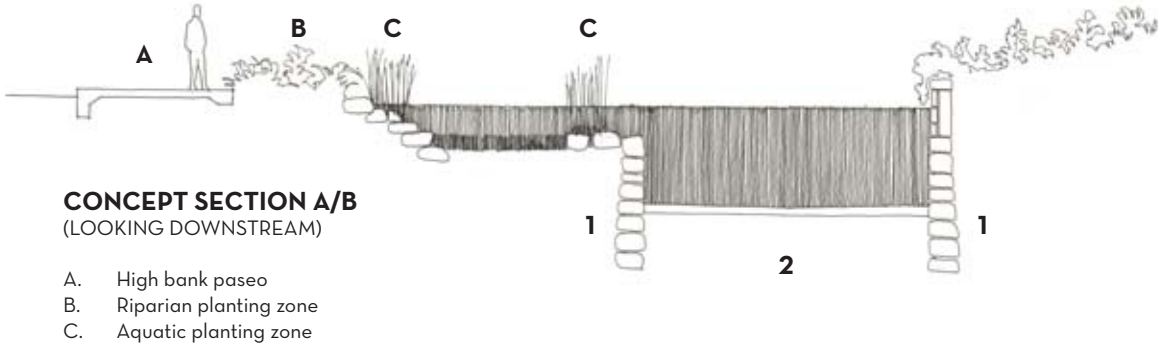
VILLA LAGUNILLA TOWNLAKE

CONCEPT PLAN A/B - In this reach San Pedro Creek and Camaron Street are resonant paths for water and people. It is the only reach that is both highly visible and accessible, and has the greatest potential of being a more naturalistic landscape. The legacy of impoundments and encampments can be reinvigorated as both a neighborhood park and scenic gateway to downtown. A crest gate downstream can raise the water surface to a level where it can be perceived as a finger lake; its shallow margins conducive for aquatic habitat and low banks inviting for picnics and play. Also under consideration is raising the water level on the upstream side of the tunnel inlet structure to redirect natural base flow from the tunnel and into the downstream channel to reduce the operational costs of the recirculation pumps.

opinion of probable cost = \$ 38,180,838



The creek section from Travis to just south of the Santa Rosa Bridge varies in depth but has a consistent width of 20' with stone masonry channel walls and a concrete channel bottom. The west bank has been raised with fill and the wall extended higher than the east wall.



The close proximity of street grade and channel invert obviates the need for paseos at both high and low banks. In this section a single paseo for pedestrians and cyclists is on the east high bank. A pinch point between the Martin and the Salinas bridges constrains the potential width of the lake but by routing the paseo within the underutilized parking lane an appreciable distance can be accommodated. The height of the east channel wall is shown reduced and the bank excavated to effectively widen the channel.



VILLA LAGUNILLA
TOWNLAKE
OPTION A/B VIEW



EXISTING AERIAL



SANTA ROSA

SALINAS

TRAVIS

CAMARON

FLORES

HOUSTON

COMMERCE

DOLOROSA



NORTH

SALON DE ALAMEDA

ALAMEDA VENUE

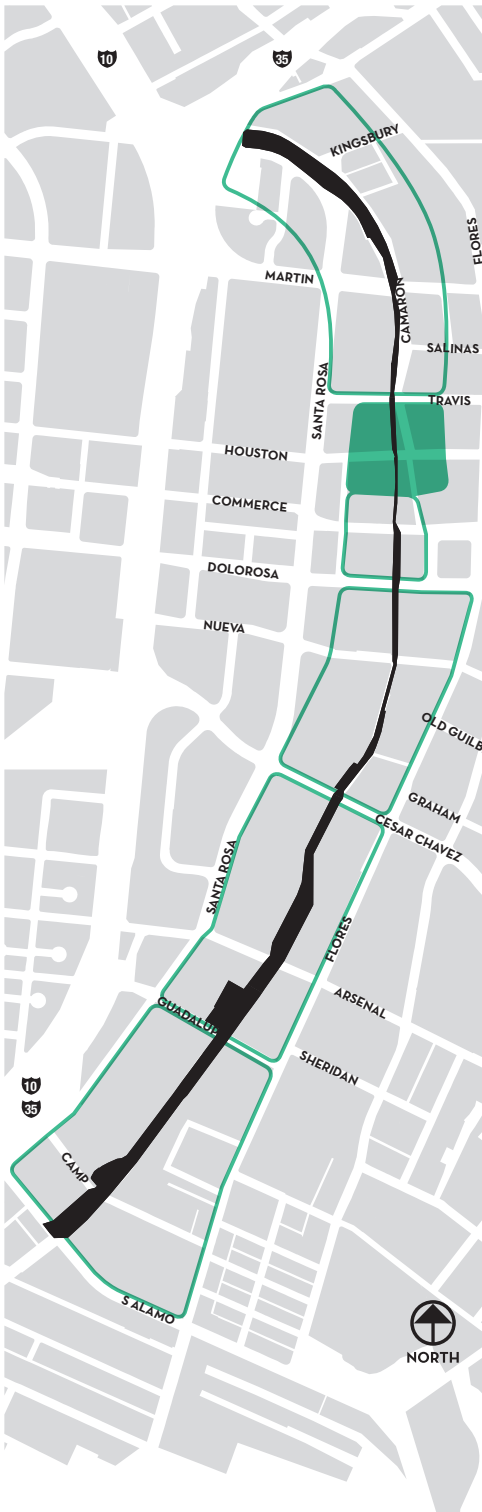
Anchored by the Alameda Theatre, the creek provides spaces for both programmed and spontaneous music performance yielding a vibrant space with robust water character.

The area is bounded by Travis Street on the north, Camaron Street on the east, the south edge of the City parking lot on the south, and the Alameda Theater and Rosa Verde medical office tower on the west. The area overlays what was the northwest edge of the c.1731 Villa de San Fernando Townsite and straddles the early suburbs of Barrio del Norte and Laredito. Alamo Brewery once occupied the city parking lot between the creek and Camaron. A coal gasification plant was in operation on the Alameda Theatre site during the late 19th century.

The Alameda Theatre was built between 1945 and 1949 and was one of the most important cultural venues in the Latino community. The theater project is currently expanding the stage house and adding a two-story back of house that in the future can be expanded vertically to accommodate a black box theatre. Although the work will greatly improve the performance capabilities of the theatre the lobby spaces remain limited as well as the linkage between the front and back of house areas. The theatre is anticipated to reopen in 2014.

The remaining areas are surface parking lots that along the east bank are owned by the City; the lot next to the theatre is leased for the Holiday Inn parking and the lot north of Houston Street is used for City staff. A 20' diameter tunnel maintenance shaft is located in the northern portion of the lot with a removable cover set flush with the asphalt paving. The parking lot on the west bank is owned by Christus Santa Rosa and serves the Rosa Verde medical office building.

The H&H effective model indicates that this 100-year flood plain covers a significantly larger area than the FEMA flood plain.



1. Rosa Verde Tower
2. City Parking Lot
3. Frost Motor Bank
4. Frost Paseo
5. City Parking Lot
6. Alameda Theater
7. Alameda Theater Expansion
8. Artes Graficas Historic Building
9. Holiday Inn



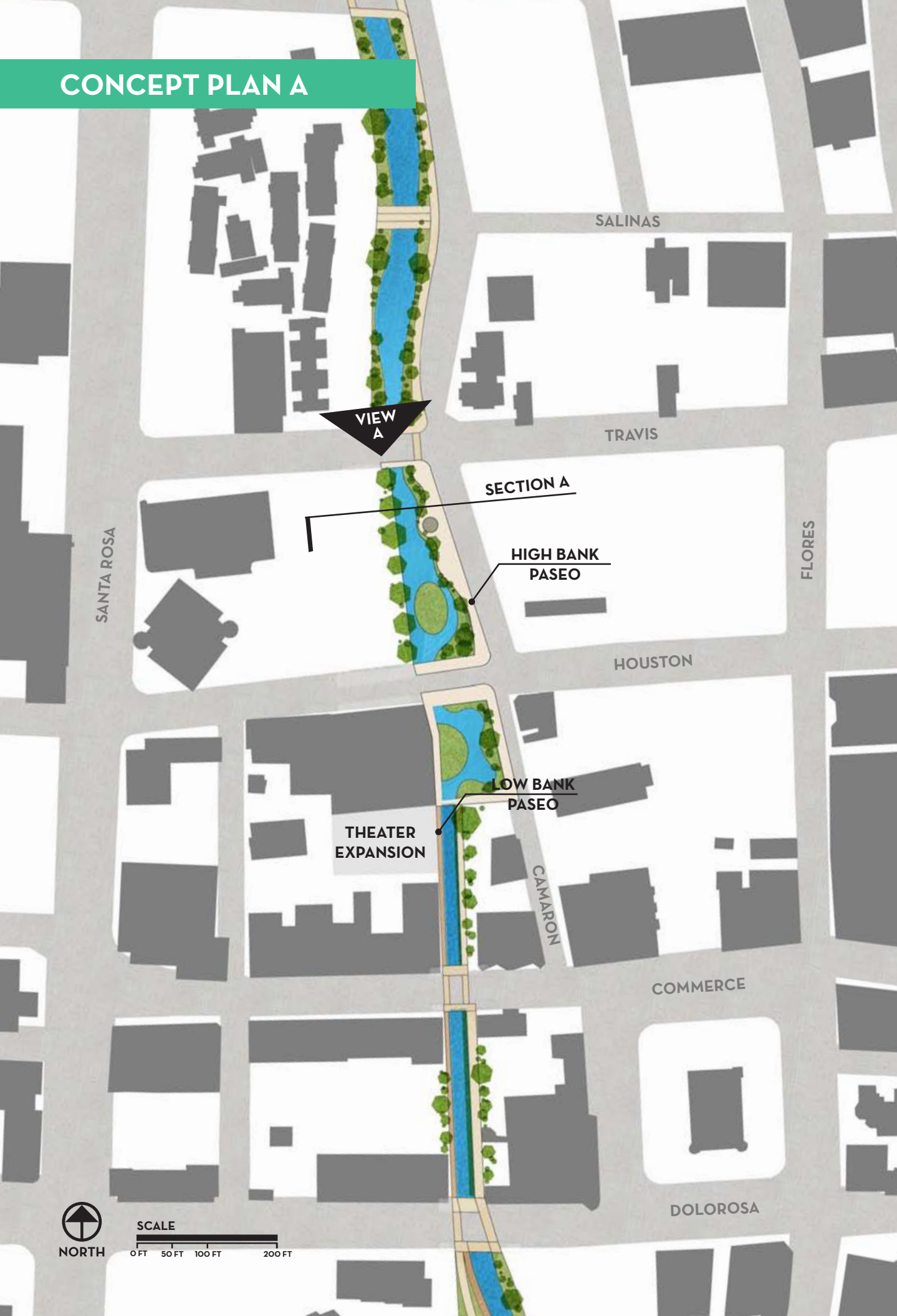
1. Parking lot Bridge looking North
2. Alameda Theater looking North
3. Parking lot looking towards Alameda Theater
4. Travis Bridge looking South
5. Channelized creek
6. Houston Street Bridge looking South

SALON DE ALAMEDA ALAMEDA VENUE

Between Travis and Houston Streets the creek is 20' wide with a concrete bottom and both banks retained by concrete channel walls. Downstream of Houston Street the channel width is reduced to 17' and is partially covered by the theatre fire exit walkway along the west bank. This 8' wide concrete walkway is part of the original theatre construction and is supported by steel beams that span between the concrete theatre foundation wall and the east stone channel wall. This condition obstructs views of the creek and constrains stormwater flow and continues south until it terminates at a concrete bridge located at the stage end of the theatre.



CONCEPT PLAN A



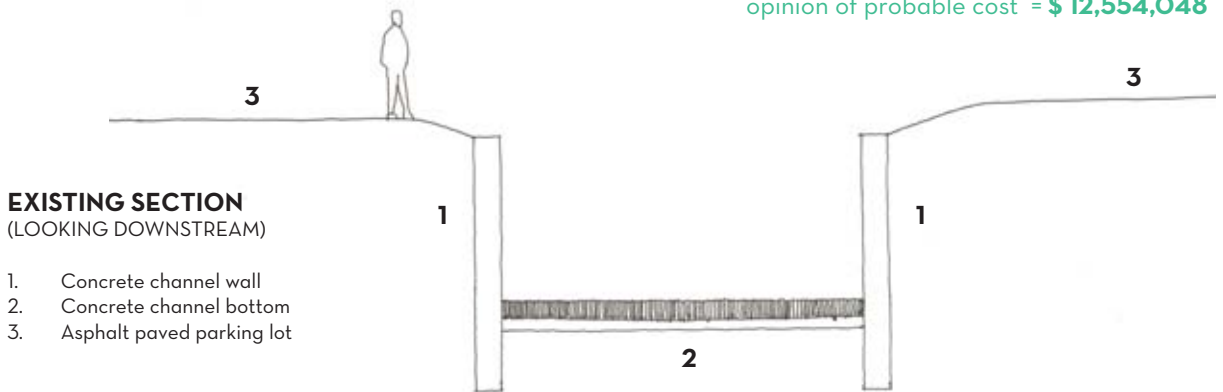
SCALE
0 FT 50 FT 100 FT 200 FT

SALON DE ALAMEDA

ALAMEDA VENUE

CONCEPT PLAN A - This block and a half course of San Pedro Creek is physically and culturally interwoven with the Alameda Theatre. The concept is to exploit the necessity of increasing capacity of the channel for flood control to produce a more significant civic setting for the theatre and place for performance-related public gathering. The City-owned parking lots along the east bank would be partially excavated to widen the channel with all parking displaced to allow the paseo to widen as a slender plaza. The new east channel wall would be a sinuous bank of vegetated terraces paralleling Camaron Street. Planting along the west bank would help to visually screen the Rosa Verde Tower parking lot. The high bank paseo would cross Houston Street and continue along Camaron until returning westward to the original course of the creek. Low islets of aquatic plantings would provide habitat and refresh water quality.

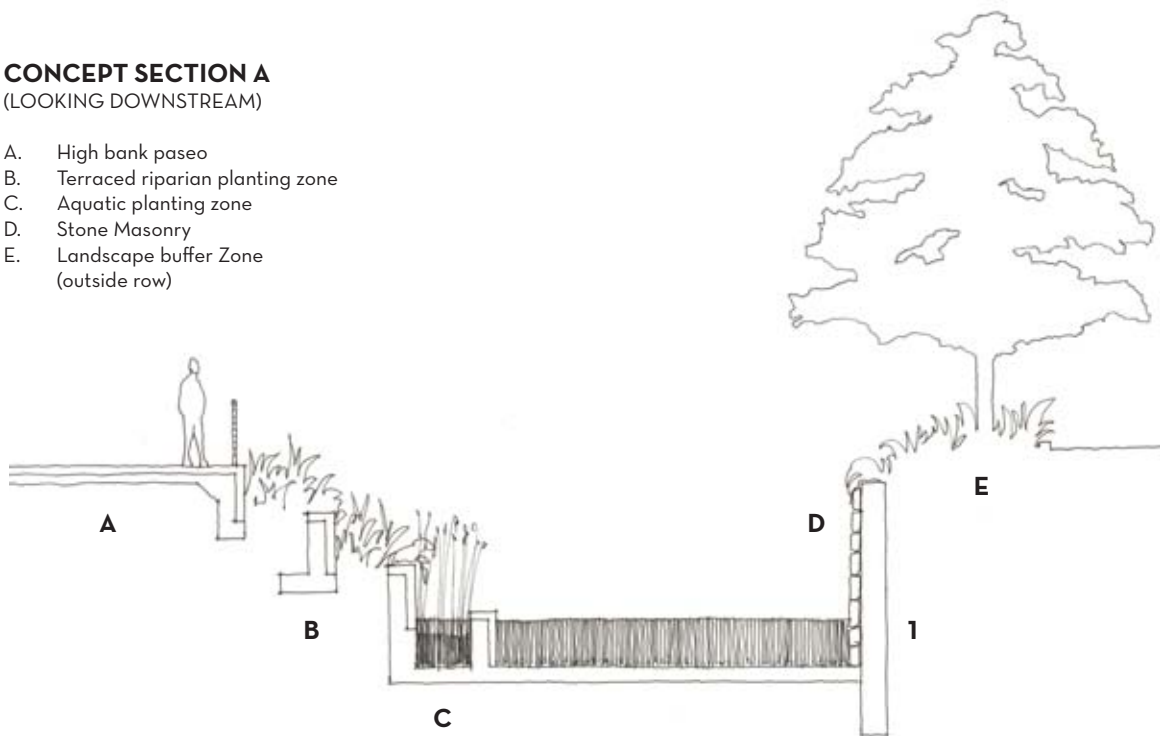
opinion of probable cost = \$ 12,554,048



The creek section between Travis and Houston Streets is 20' wide with a concrete bottom and concrete channel walls 10' in height. The adjacent grade rises several feet beyond. The crude barrier rails and random hackberry trees are not shown.

CONCEPT SECTION A (LOOKING DOWNSTREAM)

- A. High bank paseo
- B. Terraced riparian planting zone
- C. Aquatic planting zone
- D. Stone Masonry
- E. Landscape buffer Zone (outside row)



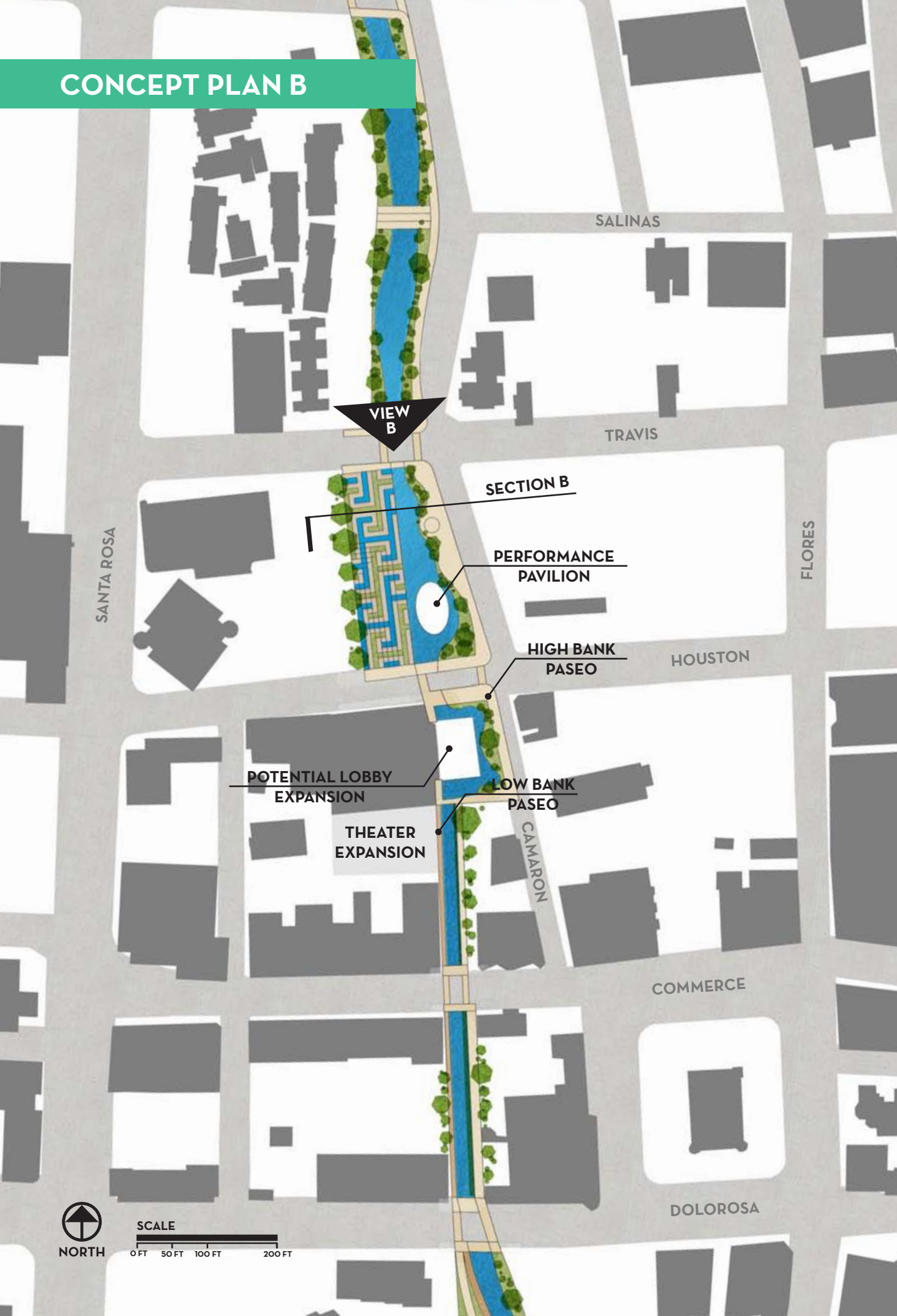
Shown here at the narrowest point, the terraced bank increases the capacity of the channel for flood control and vegetation. The existing concrete channel wall on the west remains and is shown clad with stone. Planting along the west bank to screen the parking lot is shown as a landscape easement on the adjacent property.



SALON DE ALAMEDA
ALAMEDA VENUE
OPTION A VIEW



CONCEPT PLAN B



SANTA ROSA

SALINAS

TRAVIS

VIEW B

SECTION B

PERFORMANCE PAVILION

FLORES

HIGH BANK PASEO

HOUSTON

POTENTIAL LOBBY EXPANSION

LOW BANK PASEO

THEATER EXPANSION

CAMARON

COMMERCE

DOLOROSA



NORTH

SCALE

0 FT 50 FT 100 FT 200 FT

SALON DE ALAMEDA

ALAMEDA VENUE

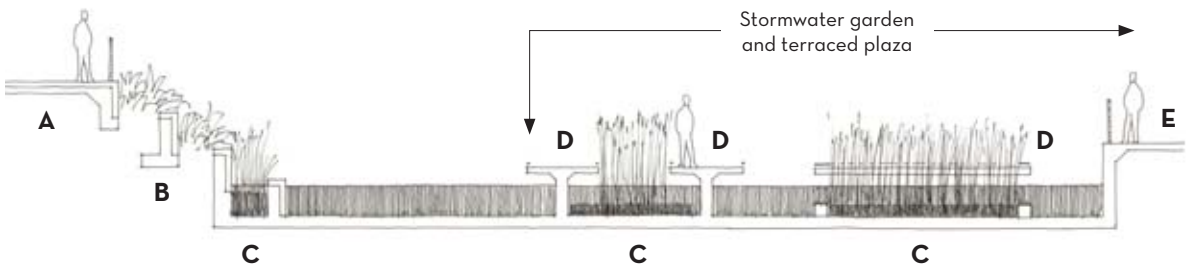
CONCEPT PLAN B - Even though the parking lot on the west bank is not a positive urban space it does simulate the open space quality of a plaza setting for the Alameda Theatre. This concept pushes the idea of a landscape buffer further west to define an actual public plaza between Travis and Houston Streets. The plaza would be terraced between the high and low bank levels incorporating hardscape with riparian and aquatic plantings. The mix of water, vegetation, and places for people to sit and perform is a fusion of the Arnesen River Theatre and Sunken Gardens. In place of the islet there would be a performance pavilion that can be used as a stage.

In the area south of Houston Street the islet is replaced by an addition to the theatre. This would allow suitable space for ground floor prefunction, vertical circulation, and lobbies with support facilities at all seating levels. This not only enhances the operational performance of the theatre, but also activates the creek in a unique and dramatic fashion. To not impede floodwater the creek would still flow under the addition.

opinion of probable cost = \$ 16,618,867

CONCEPT SECTION B (LOOKING DOWNSTREAM)

- A. High bank paseo
- B. Terraced riparian planting zone
- C. Aquatic planting zone
- D. Low bank paseo
- E. Plaza Terrace



The treatment of the east bank remains the same as previous, but the west bank is a terraced sunken plaza penetrated by open water and aquatic planting zones. Elevated walkways appear to float above the waterline on structure that protects the aquatic ecology. The walkways merge and form terraces for people to attend events at the performance pavilion. This integration of cultural activity and urban space with water quality and habitat management advances the definition of a sustainable environment and amends the creek's legacy as a cultural barrier.



SALON DE ALAMEDA
ALAMEDA VENUE
OPTION B VIEW



EXISTING AERIAL



TRAVIS

CAMARON

HOUSTON

SANTA ROSA

FLORES

COMMERCE

DOLOROSA

NUEVA

1

2

3

4

9

7

6

8

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11

10



NORTH

AGUA ANTIGUA ANCIENT WATER

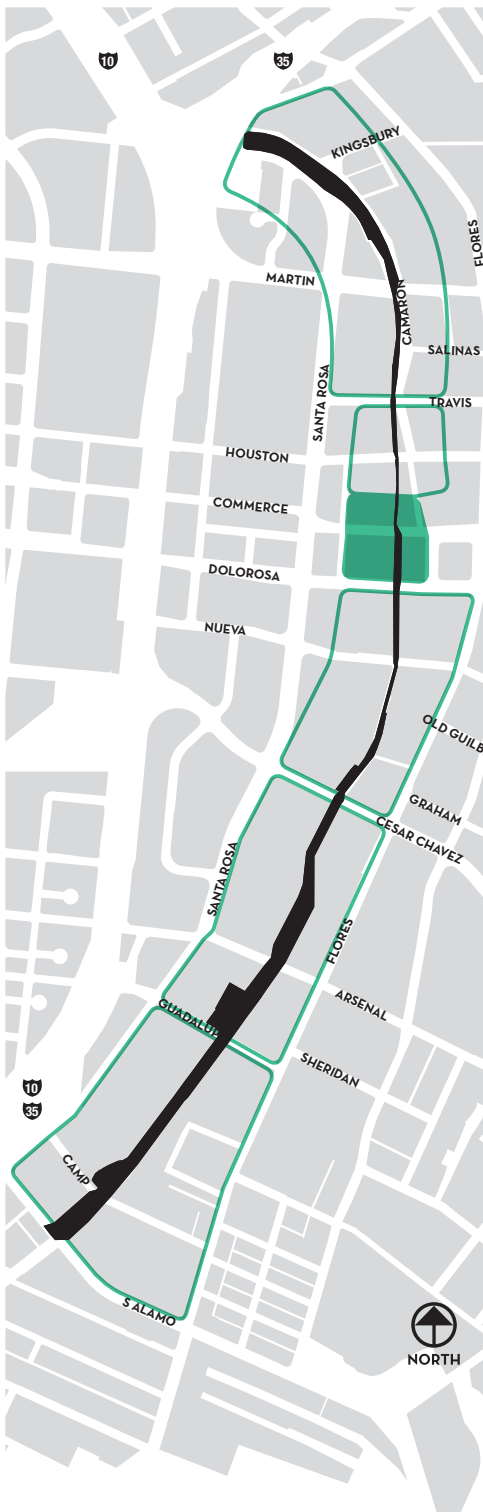
Flowing through the center of the city for centuries, breathing life into the urban core, the waters of Agua Antigua possess a silent wisdom.

The area is bounded by the Camaron and Calder Streets on the east, Dolorosa Street on the south, the properties along Laredo Street on the west and the Alameda Theatre expansion on the south. The c.1719 Presidio de Béjar and c.1731 Villa de San Fernando were established along the east bank and the creek. During the mid-eighteenth century the suburb of Laredito was established along the west bank and developed as a series of small porciones for cultivation and homesteads. Water for domestic and agricultural uses was supplied via the acequia system on both sides of the creek.

Except for the colonial Spanish Governor’s Palace, whose walled patio of the backs up to the creek at the one-block long Calder Street, the presidial structures were replaced by commercial buildings during the 19th and early 20th century buildings; the historic Continental Hotel (old Metro Health Building) is one of the city’s finest commercial examples of Italianate Architecture. The Steves Lumber yard once occupied much of the west bank and the Dean Steel Company began its operations in the Spanish Governors Palace before its restoration as an historic site and museum. Between Commerce and Dolorosa the creek was spanned with at least five bridges that provided service access between Calder and the west bank properties.

Between the Artes Graficas building and Commerce Street the buildings actually extended over the channel. The original Penners Building (since demolished) incorporated the channel into its foundation that remains as a culvert under the existing parking lot. On the west bank the foundation of the Dollar General store building cantilevers over the channel wall.

The H&H model identified this area as having the greatest discrepancy between it and the FEMA 100-year flood plain. The corrected effective floodplain extends from Santa Rosa Street to Military Plaza and is caused by the slightly lower street grade level and the reduced clearances of the Commerce and Dolorosa Bridges.



1. Artes Graficas Building
2. Dollar General Store Building
3. Penner's
4. San Fernando Cathedral/
AT&T Community Center
5. City Hall
6. Spanish Governor's Palace
7. Marti's
8. Plaza de Armas
9. Metro Health Building
10. Carter "Araña" Building
11. O'Henry House



1.



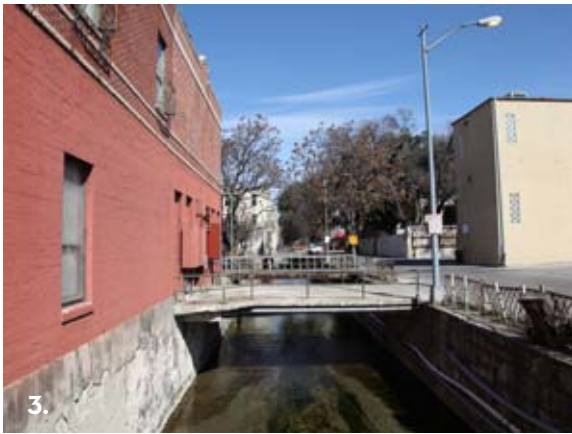
5.



2.



6.



3.

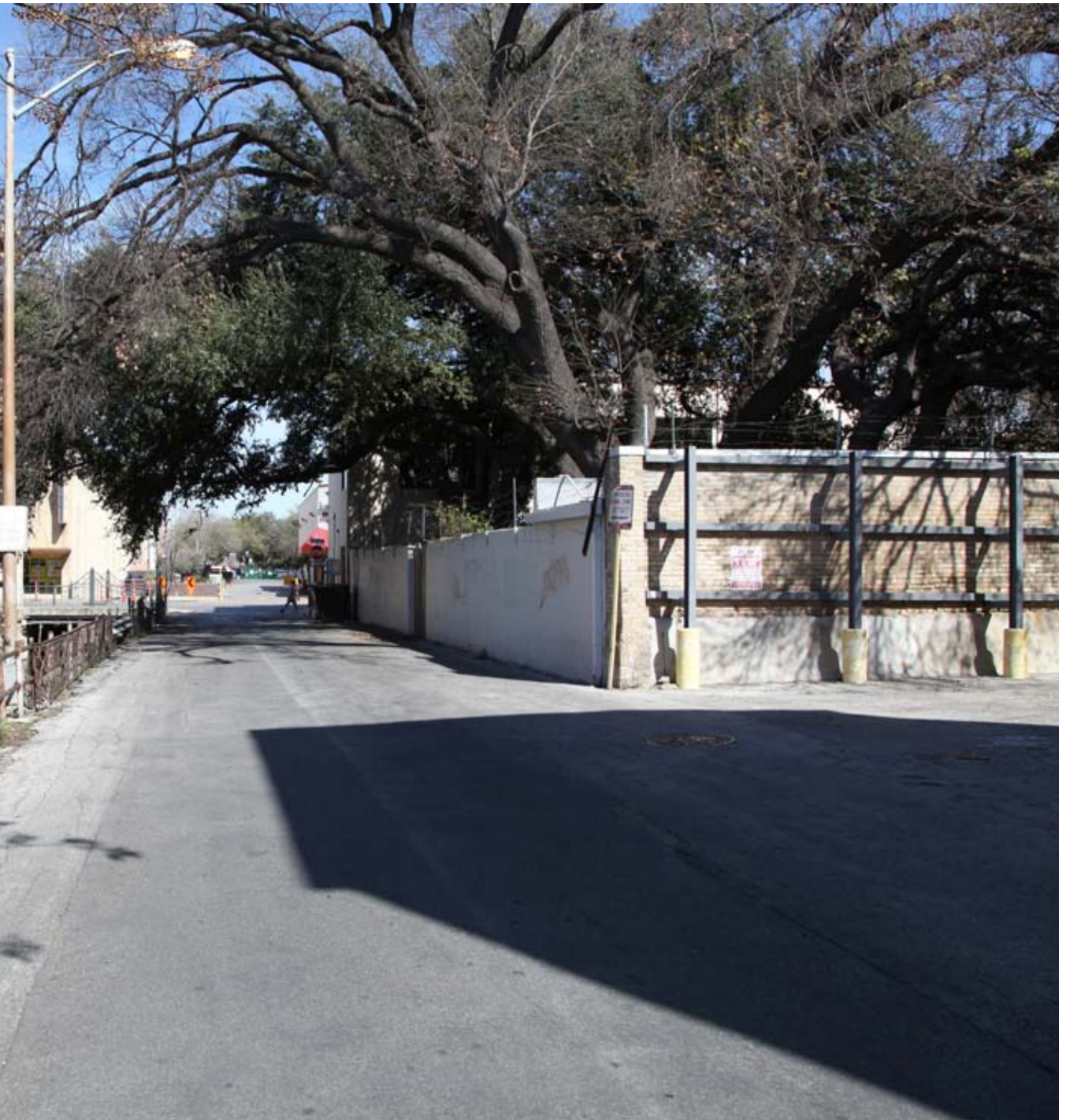


4.

AGUA ANTIGUA ANCIENT WATER

1. Commerce Bridge
looking South
2. Commerce Bridge
looking North
3. Carter Building Service
Bridge
4. Dolorosa Bridge
looking North
5. Channelized creek
6. View of Calder Street
looking North

In this severely constrained portion of the creek the channel walls are predominately of stone masonry with intermittent portions of stone, brick and concrete building foundation walls. Although within the NR Main and Military Historic District, the creek and adjoining historic fabric has been neglected and has been marginally interpreted. Calder Street functions as and looks like a service alley. Private bridges for building services and loading, surface parking, and building foundations contiguous with the channel walls make this portion of the creek especially challenging.



CONCEPT PLAN A/B

SANTA ROSA

TRAVIS

CAMARON

HOUSTON

LOW BANK
PASEO

FLORES

COMMERCE

HIGH BANK
PASEO

SECTION A/B

A/B
VIEW

DOLOROSA

NUEVA



NORTH

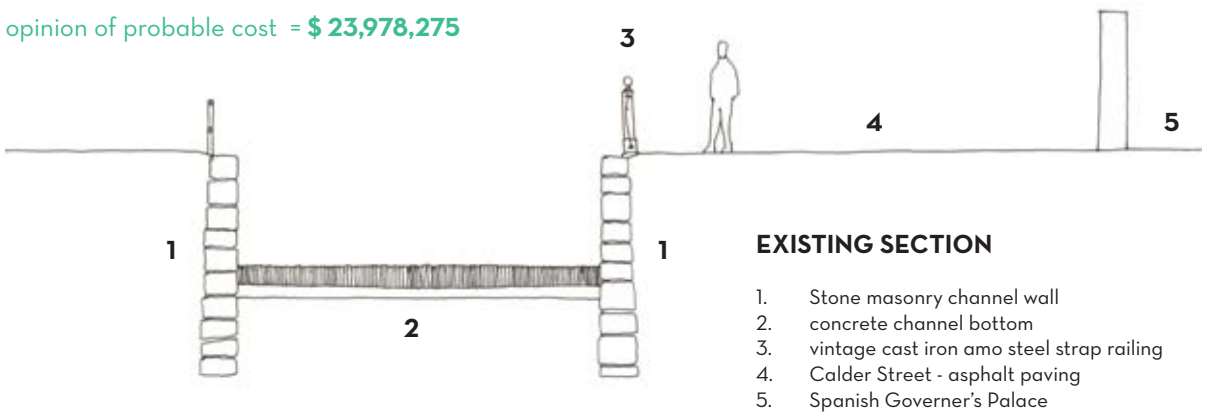
SCALE

0 FT 50 FT 100 FT 200 FT

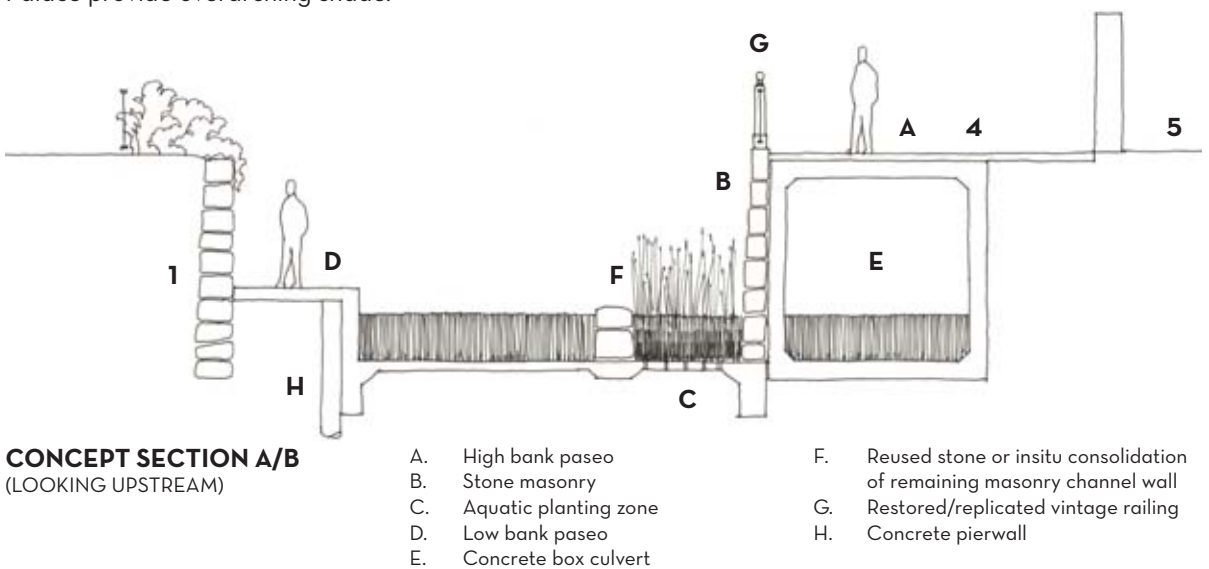
AGUA ANTIGUA ANCIENT WATER

CONCEPT PLAN A/B - In this area San Pedro Creek is the taproot of San Antonio's history as a city and the conceptual treatment of the channel will not be complete without a renewed preservation and urban design plan for the adjacent buildings and spaces. The single high-bank paseo in the Salon de Alameda area will need to transition to include a low-bank paseo as the creek courses through Agua Antigua, and the capacity of the channel will need to be increased. With the immediate adjacency of existing buildings, restricted width of the channel, and the low grade low clearances of the Commerce and Dolorosa Bridges, finding adequate pathways for water and people remains a daunting design and acquisition challenge. Calder Street offers opportunity to consolidate the need for increased capacity of the channel and both high-bank and low-bank paseos by placing a box culvert underneath. The box culvert would need to extend upstream and transition back to the open channel at Salon de Alameda.

opinion of probable cost = \$ 23,978,275



The creek section between Commerce and Dolorosa Streets is 20' wide with a concrete bottom. The stone masonry channel walls are 10' in height and intermixed with stone and concrete building foundations. Calder Street is paved with asphalt and the vintage railing of cast iron posts and basket weave strap steel railing is the only significant historic site design element directly associated with the creek. Random mulberry and hackberry trees line the west bank, but the limbs of the oak tree inside the patio of the Spanish Governors Palace provide overarching shade.



The capacity of the channel is increased by the addition of a concrete box culvert under Calder Street, removing the east channel wall and rebuilding it further east, and lowering the invert of the channel by several feet. To maintain the structural stability of the west channel wall a pierwall is shown 5' inboard the channel and provides opportunity for the low-bank paseo. The original location of the east channel wall is interpreted by reusing salvaged stone as a bulkhead for an aquatic planting zone. The width of Calder Street is reduced and repaved to allow service and emergency access but is envisioned as a car free pedestrian walk.



AGUA ANTIGUA
ANCIENT WATER
OPTION A/B VIEW



EXISTING AERIAL



6

DOLOROSA

1

2

ST. LAREDO

7

SANTA ROSA

NUEVA

3

4

FLORES

5

CESAR CHAVEZ



NORTH

EL MERODEO THE MEANDER

Emancipating the original meandering waters of the creek, Merodeo allows a deep embrace of the banks in an authentic playful manner.

The area is bounded by Dolorosa Street on the north, Flores Street on the east, Cesar Chavez Blvd on the south and Laredo Street on the west. The northern portion of this area falls within the original 1731 Villa de San Fernando Townsite. The southern portion on the east bank was part of the Barrio del Sur, and on the west bank was part of Laredito. The area between Dolorosa and Nueva Streets is within the NR Main and Military Plaza Historic District.

Similar to the other area of the creek, early settlement consisted of cultivated porciones and small homesteads; the Navarro Historic Site is a significant early 19th century building compound and exemplary of San Antonio's proto-cultural landscape lost to historic redevelopment in the late 19th and early 20th centuries. Rail line spurs were extended from the MKT train station on both banks of the creek up to Nueva and up to Dolorosa along the east bank. The hub on the west side of the creek was constructed in 1904 while the one on the east side of the creek was established in 1929. These prompted the rise of commercial and light industrial buildings along Flores and Laredo streets of which there are a surviving handful.

But much of the area's architectural urban fabric was razed through the HUD urban renewal program for San Antonio's near west sides that cleared the way for the 1960's City police headquarters and jail and the later County parking structures and hotels along Cesar Chavez.



1. Wackenhut Correctional
2. City of San Antonio Parking Lot
3. Former San Antonio Police Headquarters
4. Bexar County Parking Garage
5. Bill Miller's Headquarters
6. City Hall
7. Navarro Historic Site & Museum



EL MERODEO THE MEANDER

1. View from city parking lot looking Northwest
2. View looking south to Graham Street Bridge
3. Nueva Street Bridge, South
4. City Parking lot, looking Northeast
5. View from Cesar Chavez, looking North
6. View of Creek between Bexar County Parking Garage and future U.S. Courthouse site

From Dolorosa south the creek is 20' wide with a concrete bottom and 10' high stone masonry channel walls. Its course is straight and breaks only at the Nueva and Graham Street bridges. Between Dolorosa and Nueva the City-owned property along the east bank has been cleared and has an interim parking lot and grassed area awaiting future development. On the west bank are County-owned properties that are substantially developed and includes the high-rise correctional facility. South of Nueva the condition is reversed with County-owned parking structures lining the east bank and City-owned property, which is soon to be GSA property and site of the future U.S. Courthouse.



CONCEPT PLAN A/B

SANTA ROSA

DOLOROSA

LOW BANK
PASEO

LOW BANK
PASEO

NUEVA

VIEW
A/B

FUTURE FEDERAL
COURTHOUSE BLDG.

SECTION A

FLORES

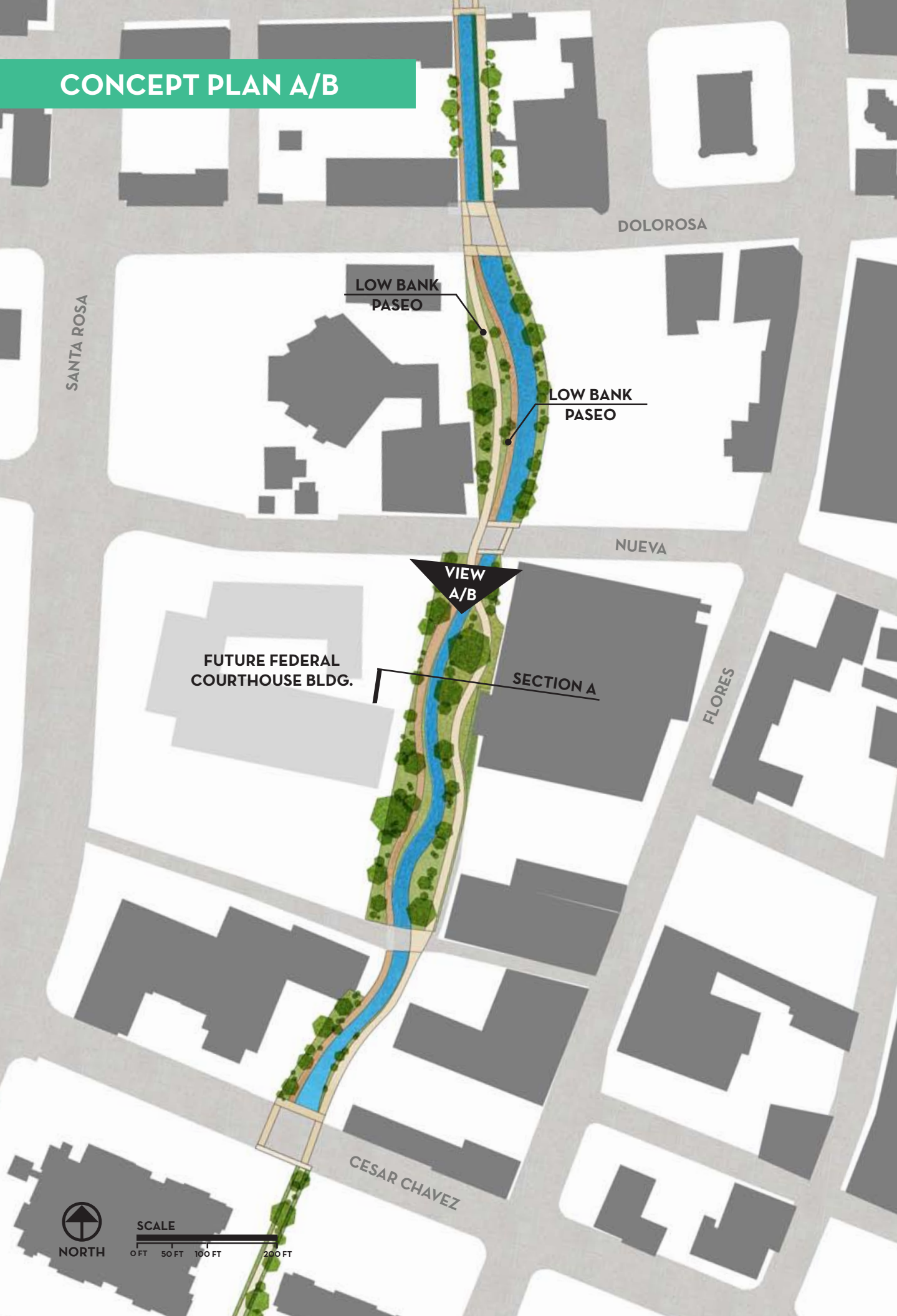
CESAR CHAVEZ



NORTH

SCALE

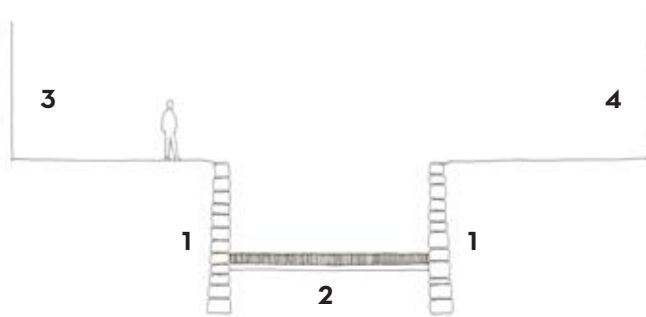
0 FT 50 FT 100 FT 200 FT



EL MERODEO THE MEANDER

CONCEPT PLAN A/B - The absence of buildings and receptiveness of the City has allowed the idea of the creek to reconstitute a meandering and natural character through this area. There is also opportunity to achieve a slightly higher difference of invert elevation between Dolorosa and Cesar Chavez so there can be small waterfalls or rapids. Considering the constrained and ruler straight runs both up and downstream of this area, this character will make an important difference in the urban form and sensory experience of people. High and low-bank paseos are shown along the west bank between Dolorosa and Nueva and allow a sloped earthen bank to be modified with future development. Pedestrian linkage to the Navarro Historic Site is important and the high-bank paseo continues south across Nueva to avoid the County parking garage exit ramp. It would bridge the creek as soon as there is enough east bank area to receive the walk. The treatment of the banks will likely vary between terraced and sloped depending on the position of the channel. It may be feasible to leave a substantial portion of the existing stone walls in situ and possibly incorporate them in the design.

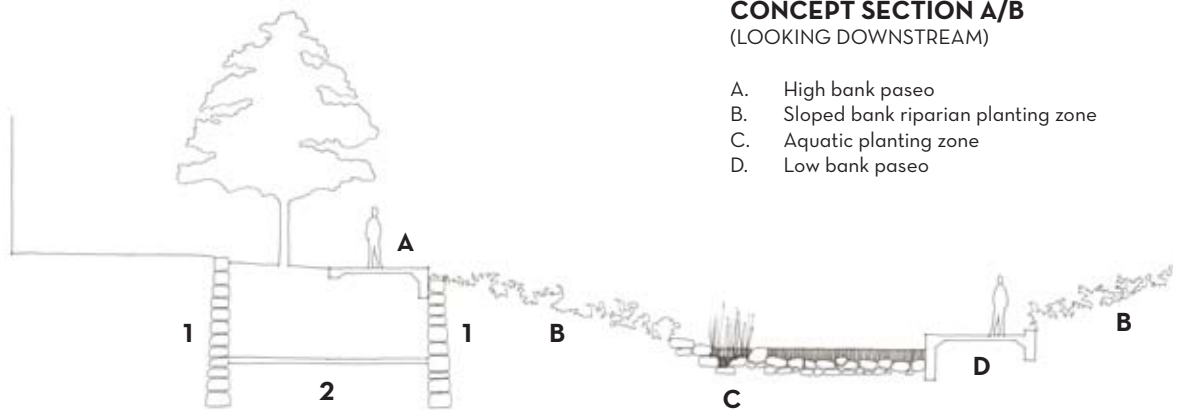
opinion of probable cost = \$ 23,560,537



EXISTING SECTION (LOOKING DOWNSTREAM)

1. Stone masonry channel wall
2. concrete channel bottom
3. Bexar County Parking Garage
4. Old city police station (under demolition)

From Dolorosa south the creek is 20' wide with a concrete bottom and 10' high stone masonry channel walls. The nearly equal areas on both sides of the channel are due to the railroad spurs that once lined the creek.



CONCEPT SECTION A/B (LOOKING DOWNSTREAM)

- A. High bank paseo
- B. Sloped bank riparian planting zone
- C. Aquatic planting zone
- D. Low bank paseo

The openness of the creek is substantially increased by the wide swings of the meanders. Sloped earthen banks offer broad swaths of riparian plantings and a more relaxed topography. The natural rock bottom and aquatic planting margins add to the ecological integrity of the creek. Portions of the existing stone channel walls can remain in situ and possibly part of the ultimate design.



EL MERODEO
THE MEANDER
OPTION A/B VIEW



EXISTING AERIAL



CANAL PRINCIPAL MAIN CANAL

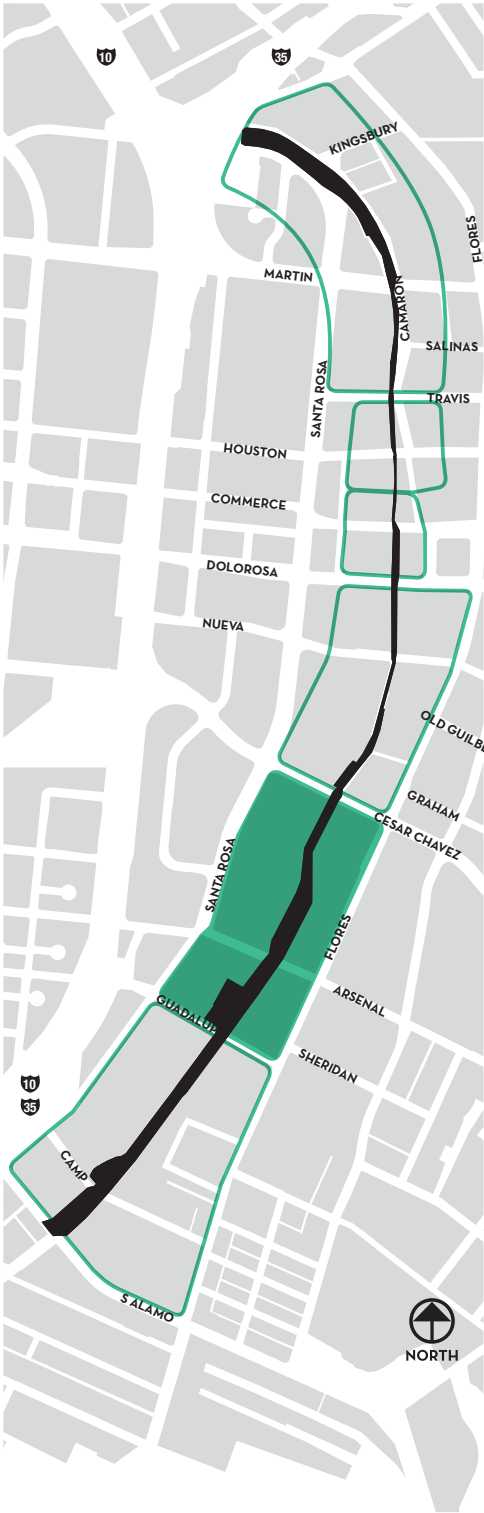
By dismantling portions of the culvert to create an entirely new waterscape for people and wildlife while preserving its basic engineering value, Canal Principal reconnects water and urban space as a place for family, recreation and wellness.

With a footprint bound by Cesar Chavez Boulevard on the north, Flores Street on the east, Arsenal Street on the south and Laredo Street on the west, the creek is contained in a concrete culvert for most of its length, paved over with asphalt beginning at Cesar Chavez Blvd. The culvert continues under paved drives and parking areas.

Following the Civil War, agricultural land uses were redeveloped for residential uses with commercial uses and the railroad, along Laredo and Flores Streets. The area east of Flores was developed as the U.S. Arsenal, which expanded east to the San Antonio River. Between 1904 and 1929, the MKT Railroad assembled the properties along the creek to extend rail lines for passengers and freight to their station and rail yard on Durango Street. The creek was channeled into an underground concrete culvert to accommodate the rail yard and ultimately paved over.

Following WWII, the MKT railroad ultimately abandoned its operations and the facilities were demolished in 1965. Durango Street was extended across the San Antonio River to facilitate traffic circulation for HemisFair 68, and the property redeveloped for hotels in the 1970's and 80's. The original concrete culvert was replaced with the existing larger culvert. The outlet structure for the San Pedro Creek bypass tunnel was completed in 1996.

The four channels of the culvert are about 11'x11' each and contiguously inline and within two parallel drainage easements. Arsenal Street crosses the culvert; there is no bridge structure proper, and the culvert daylights several hundred feet south of the crossing into a wider concrete lined channel at the bypass tunnel outlet structure. A small check dam serves to divert some of the flow into the bypass tunnel, which allows recirculation of the water.



1. La Quinta
2. Courtyard Marriott
3. Fairfield Inn & Suites
4. Tunnel Outlet Structure
5. Butterkrust Building



1.



5.



2.



6.



3.



4.

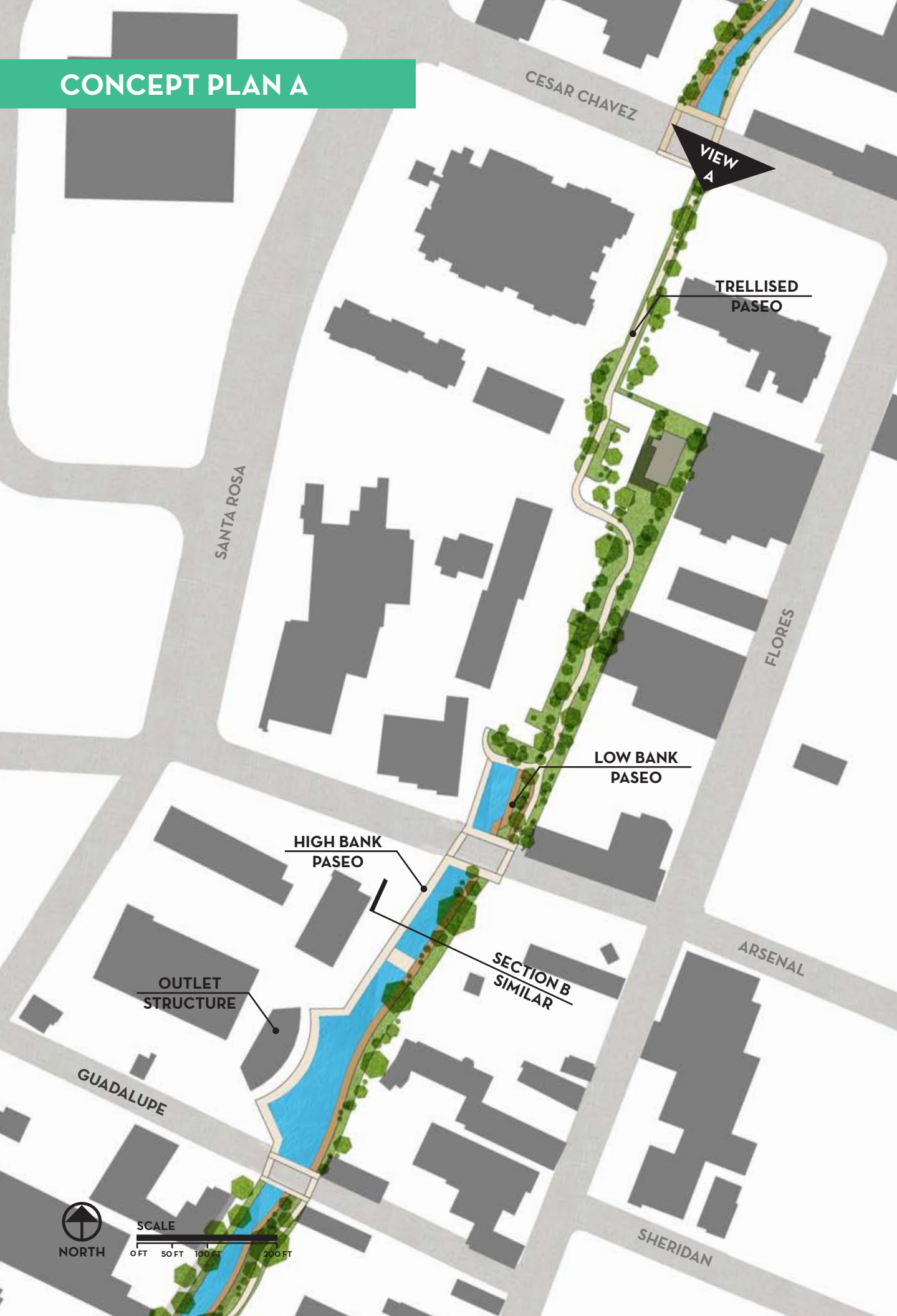
CANAL PRINCIPAL MAIN CANAL

1. Channel View looking North at Ceasar Chavez Bridge
2. La Quinta Hotel Parking lot (paved over channel)
3. Parking lot for Mariott
4. View of Chanel looking North from El Paso Street Bridge
5. View of Fairfield grounds looking north along the culvert easement
6. Mariott parking lot view

With several mid-range hotels aligning the creek, there tends to be an influx of visitors in this stretch. However, a number of residences also lie within close proximity. While nearly all of the areas of the hotel properties are improved and maintained, they remain as 'automobile islands' with marginal pedestrian connections. Commercial properties along the east bank are the back yards and service areas of buildings or intermittent paved parking areas.



CONCEPT PLAN A



CESAR CHAVEZ

SANTA ROSA

FLORES

ARSENAL

SHERIDAN

VIEW A

TRELLISED PASEO

LOW BANK PASEO

HIGH BANK PASEO

SECTION B SIMILAR

OUTLET STRUCTURE

GUADALUPE



SCALE
0 FT 50 FT 100 FT 200 FT

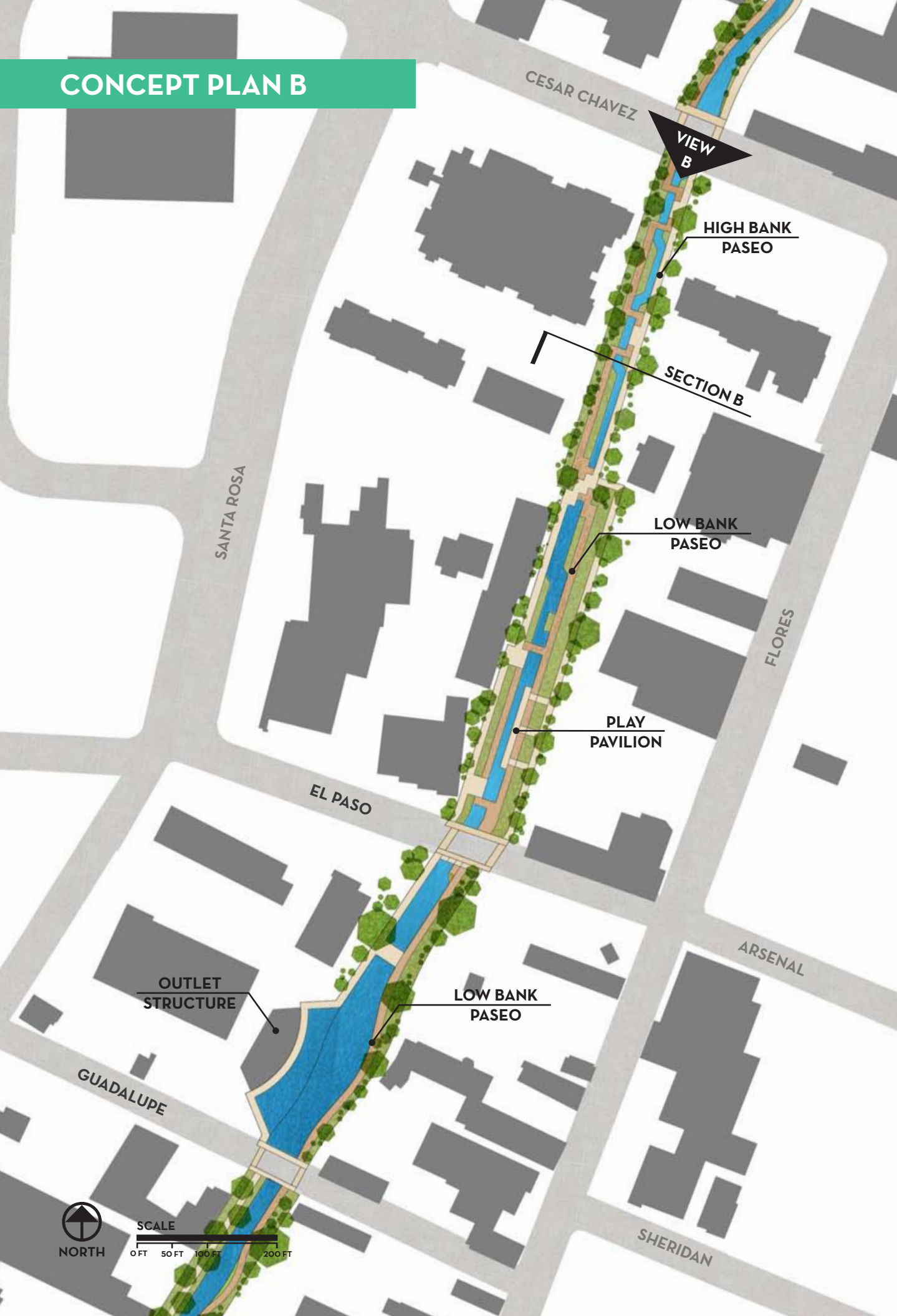
CANAL PRINCIPAL MAIN CANAL



CONCEPT PLAN A - The initial San Pedro Creek study did not adequately address the continuity of the creek or paseo in the area of the culvert. It was subsequently felt that the creek and paseo should be as contiguous as possible. This option looks at opening up the culvert south of the hotel parking lots but for the majority of the remaining portion provides a surface walkway equivalent to a high-bank paseo (without the bank). The paseo would displace a row of parking in the northern portion until it could be routed through an area currently landscaped with grass and a double row of cottonwood trees. The shallow soil depths and parking constraints severely limit the viability of trees, so shade is provided by a trellised canopy. The section related to the portion of the culvert that could be opened up is shown in Option B.

opinion of probable cost = \$ 25,126,412

CONCEPT PLAN B



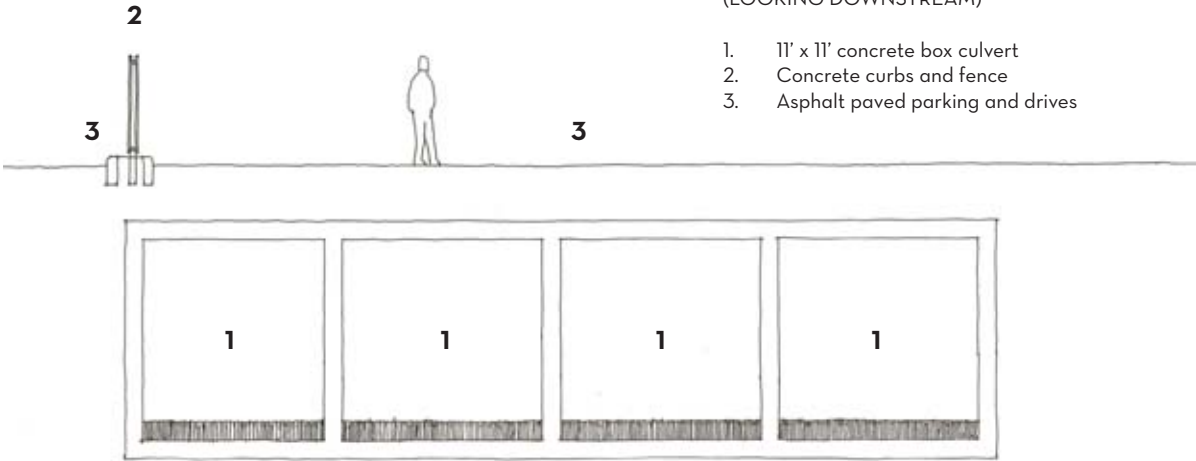
CANAL PRINCIPAL MAIN CANAL

CONCEPT PLAN B - Conversion of the culvert from an underground drainage tunnel to an open accessible creek advances San Antonio's leadership in water solutions for a sustainable future. This option approaches the concrete culvert as a rough block of stone that is sculpted to an economical and life-sustaining form. The long, straight, parallel boxes are reduced but not removed, and crisscrossed by the course of the creek, paseos and strips of plantings. The interwoven paths and simultaneity of movement will be even more apparent as one physically moves through, in, out and across and various levels. Space for riparian and high-bank trees will still remain constrained and so the trellis is maintained in this option. The actual design should explore different ways the culvert can be sculpted and possibly reuse the sections of concrete in other areas.

opinion of probable cost = \$26,995,038

EXISTING SECTION
(LOOKING DOWNSTREAM)

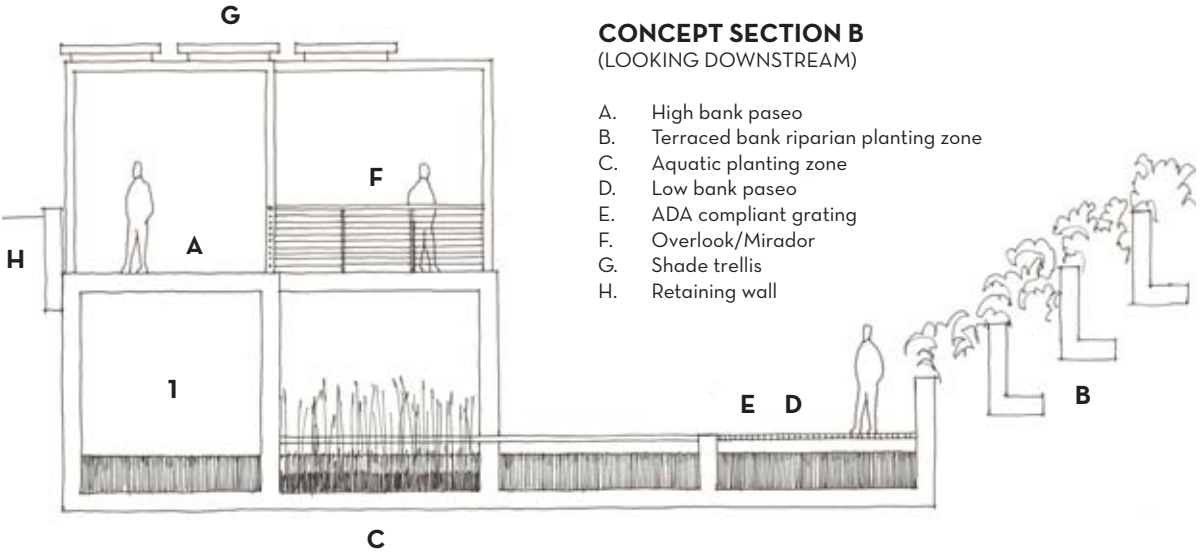
- 1. 11' x 11' concrete box culvert
- 2. Concrete curbs and fence
- 3. Asphalt paved parking and drives



The existing culvert is a series of long parallel boxes constructed with cast in place concrete. There is 3' - 4' of fill above the top deck.

CONCEPT SECTION B
(LOOKING DOWNSTREAM)

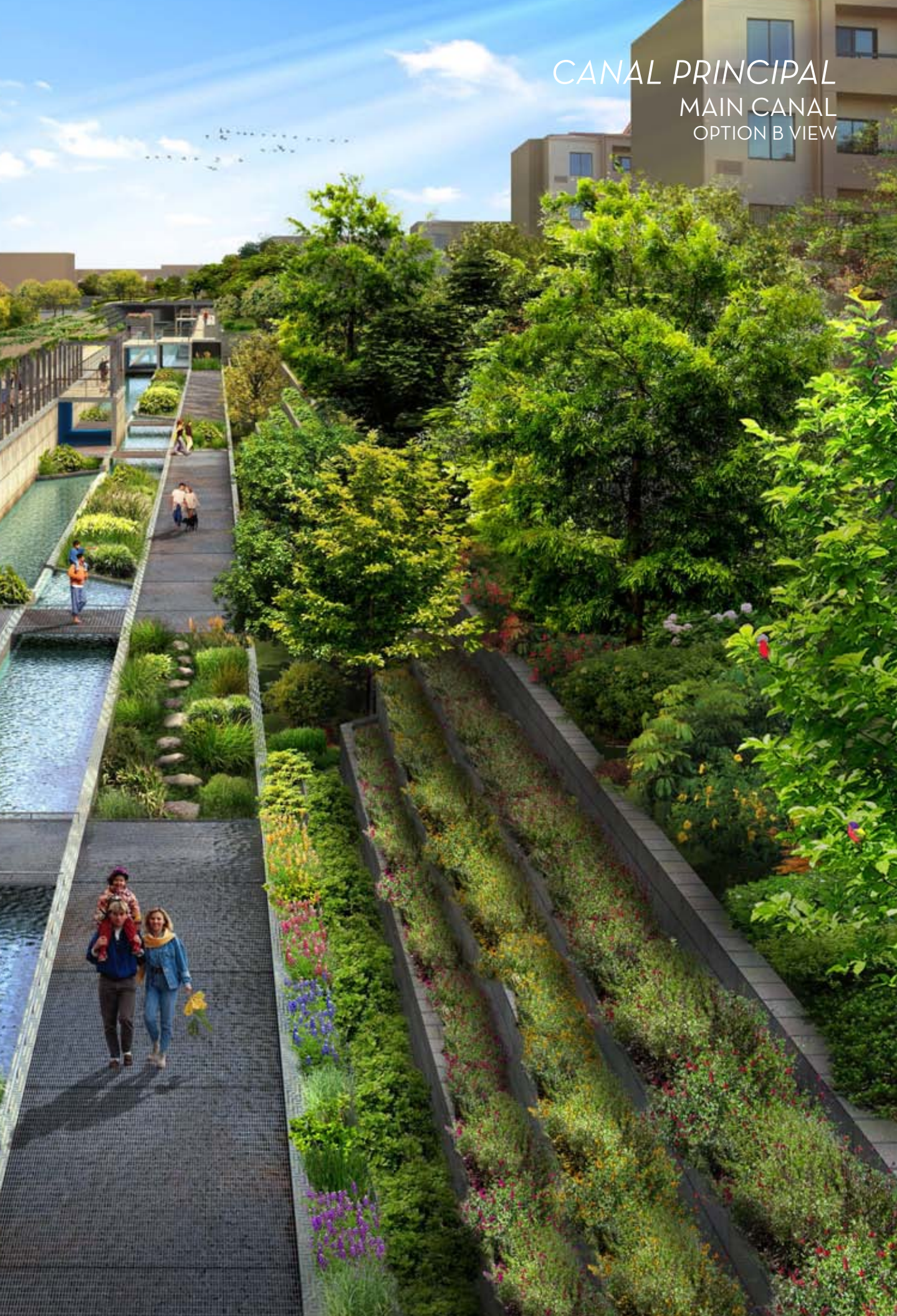
- A. High bank paseo
- B. Terraced bank riparian planting zone
- C. Aquatic planting zone
- D. Low bank paseo
- E. ADA compliant grating
- F. Overlook/Mirador
- G. Shade trellis
- H. Retaining wall



Leaving one of the boxes along one side maintains the structural stability of the culvert as a retaining wall, supports the high-bank paseo, and braces other contiguous box portions as overlooks or pavilions. Keeping the lower portions of the walls and bottom intact also maintains overall structural integrity. A terraced slope enhances the openness and provides a quick way up and out for people in the channel. Aquatic planting zones will need to be carefully designed to survive flood events, but maintain the continuity of habitat throughout the entire creek.



CANAL PRINCIPAL
MAIN CANAL
OPTION B VIEW



EXISTING AERIAL



35

10

GUADALUPE

SANTA ROSA

1

8

7

2

6

3

FLORES

CAMP

4

5

S. ALAMO



NORTH

CAMPO ABAJO LOWER FIELD

Identified in the WROC study as an emerging arts district, the Campo Abajo area is envisioned to fuse a cool creative vibe between culture and landscape.

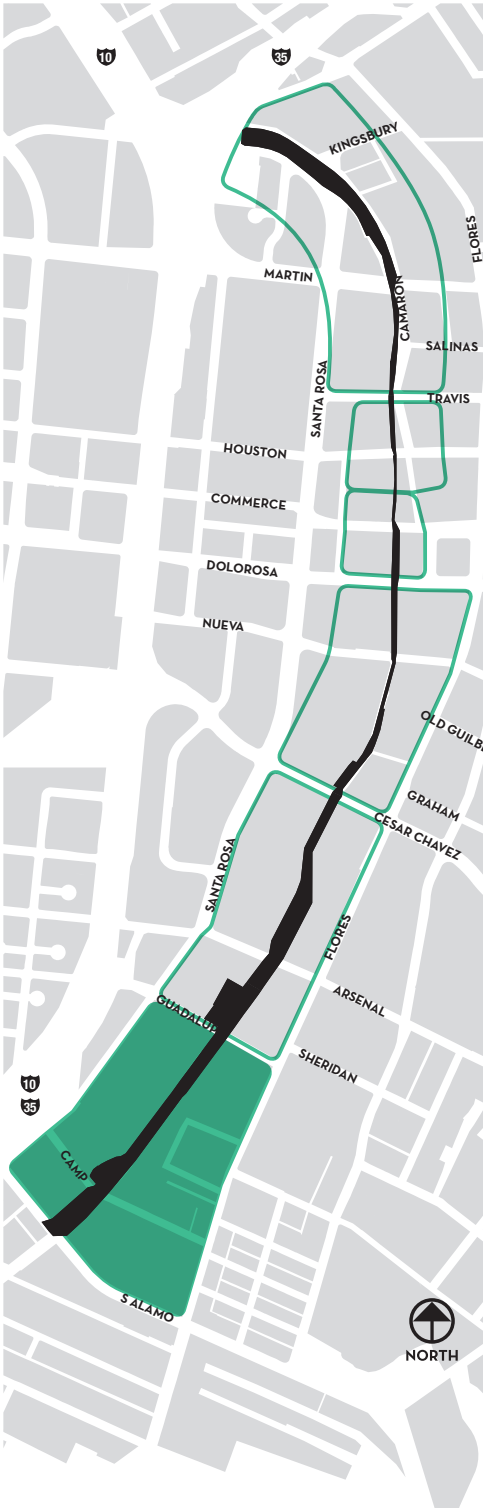
The area is bounded by Guadalupe Street on the north, Flores Street on the east, South Alamo Street on the south and Laredo Street on the west.

The land south of Nueva Street between the San Antonio River and San Pedro Creek was known during the 18th century and much of the 19th as the labores de abajo, the lower fields. These porciones or suertes were irrigated by the acequia, and were privately owned relatively narrow and long lots that ultimately established the current street pattern. Post agricultural development was initially residential as Barrio del Sur expanded southward during the latter half of the 19th century. When the MKT railroad extended its tracks to its new station at Durango and Flores during WWI many adjacent properties were redeveloped for commercial and light industrial uses. In the post WWII era IH 35 diverted much of the regional traffic that once flowed on Laredo and Flores Streets. The closure of the MKT station and termination of freight service to the commercial properties was a signal decline for the economic vitality of the area.

The properties along the west bank are a mix of commercial and lodging uses but include a USPS facility (78204) and CPS substation, and back yards along the creek that are generally paved for parking or are unimproved. Two structures directly abut the creek at the north portion. Along the east bank the creek is fronted by a single property (Dean Steel) between Camp and Guadalupe streets.

Buildings are primarily single-story and low rise masonry commercial and warehouse structures, about half of which were constructed during the middle and late 20th century to take advantage of commercial rail lines flanking the creek and the Laredo and Flores Street arterials. The most prominent of these structures is the Camp Street Lofts, a residential conversion of a 5-story industrial building. There are a number of additional properties associated with this building including the privately owned Chris Park.

Other structures are the USPS facility, the City of San Antonio Development Services, and three motels. Small residential and commercial structures that may be considered historic are found throughout the area along Camp, Laredo and Guadalupe Streets, and vary in design and materials.



1. Judson Lofts
2. Deansteel
3. Chris Park
4. Camp Street Lofts
5. Department of Development Services
6. U.S. Post Office
7. Best Western Hotel
8. CPS Substation



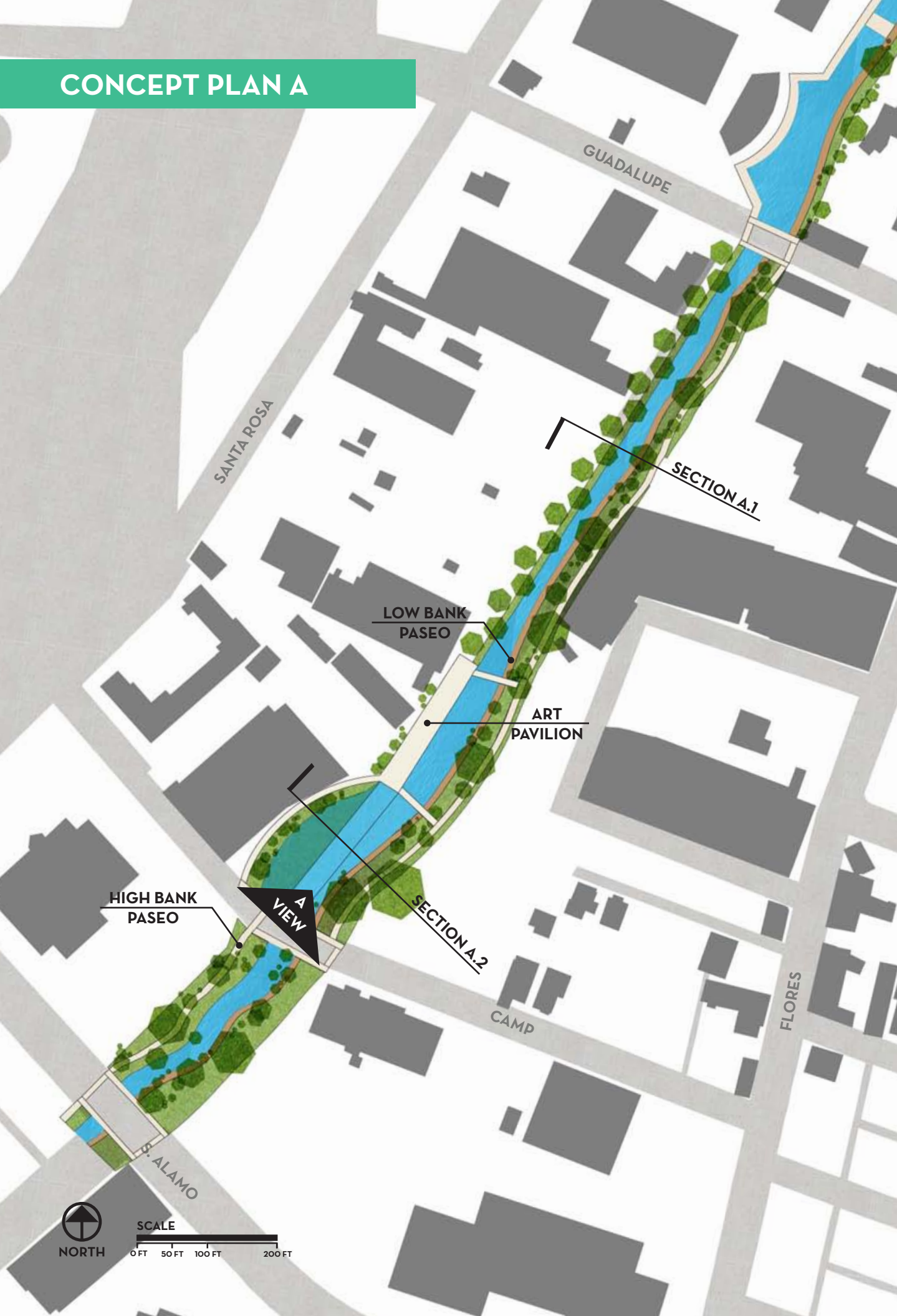
CAMPO ABAJO LOWER FIELD

1. Camp Street lofts, looking West
2. Old MKT Railroad tracks, looking south
3. Creek looking South
4. Former MKT Railyard, looking south
5. Creek at Campstreet Bridge, view south
6. Box culvert view and adjacent property, looking north

The 30' width of the existing channel and overtopping flood plain make any improvements in this area unfeasible without additional right-of-way or easement. From Camp Street to Guadalupe Street the creek is an open channel 13 feet in height except for the 120' long concrete culvert just north of Camp Street. The channel walls and culvert appear to be in very good structural condition. The differences between the existing and effective H&H models are variable but indicate that the existing channel section needs to be increased to keep the 100-year flood plain within the banks. The creek currently has earthen banks between South Alamo and Camp Street and provides the widest right of way within the entire Project area.



CONCEPT PLAN A



SANTA ROSA

GUADALUPE

SECTION A.1

LOW BANK PASEO

ART PAVILION

HIGH BANK PASEO

VIEW

SECTION A.2

CAMP

FLORES

S. ALAMO



NORTH

SCALE
0 FT 50 FT 100 FT 200 FT

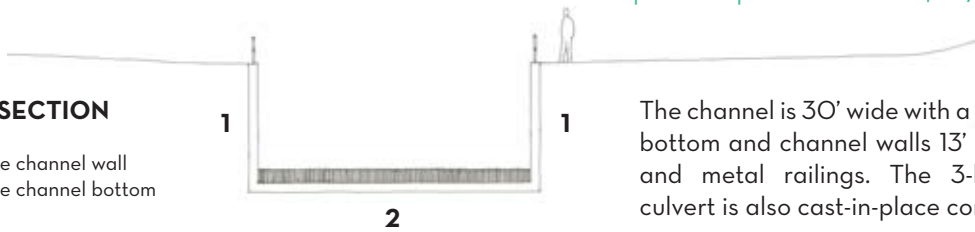
CAMPO ABAJO LOWER FIELD

CONCEPT PLAN A - In this area the creek is revived through reconfiguration of the channel but also by expanding its capacity as a gathering place for people and urban park space for this art and industry oriented community. In keeping with the repurposing of existing infrastructure, the concept in this area is to make the most of the channel by keeping the concrete channel bottom, walls and the box culvert as a plaza area and supporting a pavilion. The east channel wall is reduced and the low and high-bank paseos are routed along the terraced east bank. To screen the CPS substation and service areas of properties along the west bank a continuous planting area is placed within the channel retained by a new inboard channel wall. To avoid a geometrically straight channel such as seen in the Canal Principal, the width of the channel is shown as sinuously variable.

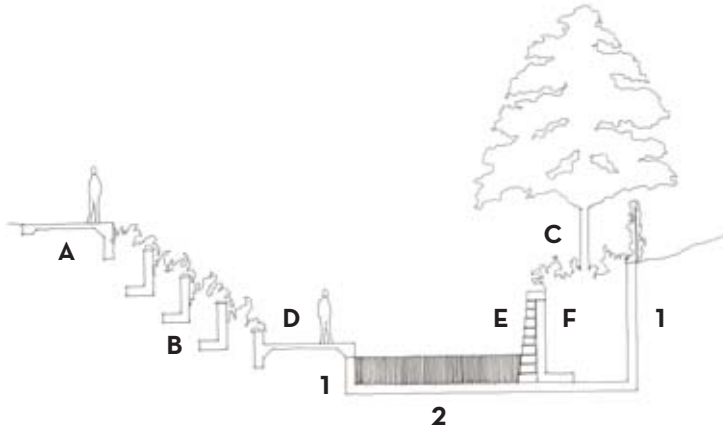
opinion of probable cost = \$25,592,437

EXISTING SECTION

- 1. Concrete channel wall
- 2. Concrete channel bottom



The channel is 30' wide with a concrete bottom and channel walls 13' in height and metal railings. The 3-box box culvert is also cast-in-place concrete.



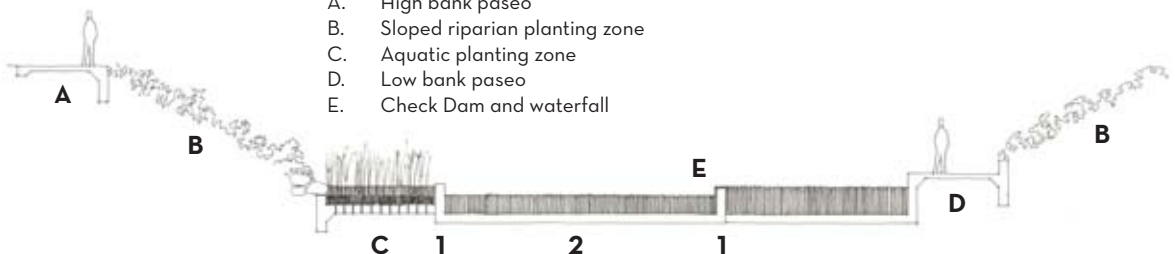
CONCEPT SECTION A.1 (LOOKING DOWNSTREAM)

- A. High bank paseo
- B. Terraced bank riparian planting zone
- C. Landscape buffer
- D. Low bank paseo
- E. Stone masonry
- F. Retaining wall

Section 6.A.2 shows the existing west retaining wall remaining as is with a new stone block wall constructed inboard to create a planting area for screening the adjoining properties. The concrete channel bottom would remain as is and the east retaining wall removed to provide a terraced bank with both a low and high bank paseo. An alternate approach might be to establish a planting strip either through easement or acquisition and approximately ten feet in width on the properties that abut the west retaining wall.

CONCEPT SECTION A.2 (LOOKING UPSTREAM)

- A. High bank paseo
- B. Sloped riparian planting zone
- C. Aquatic planting zone
- D. Low bank paseo
- E. Check Dam and waterfall



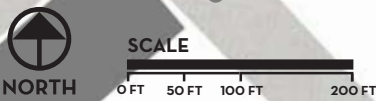
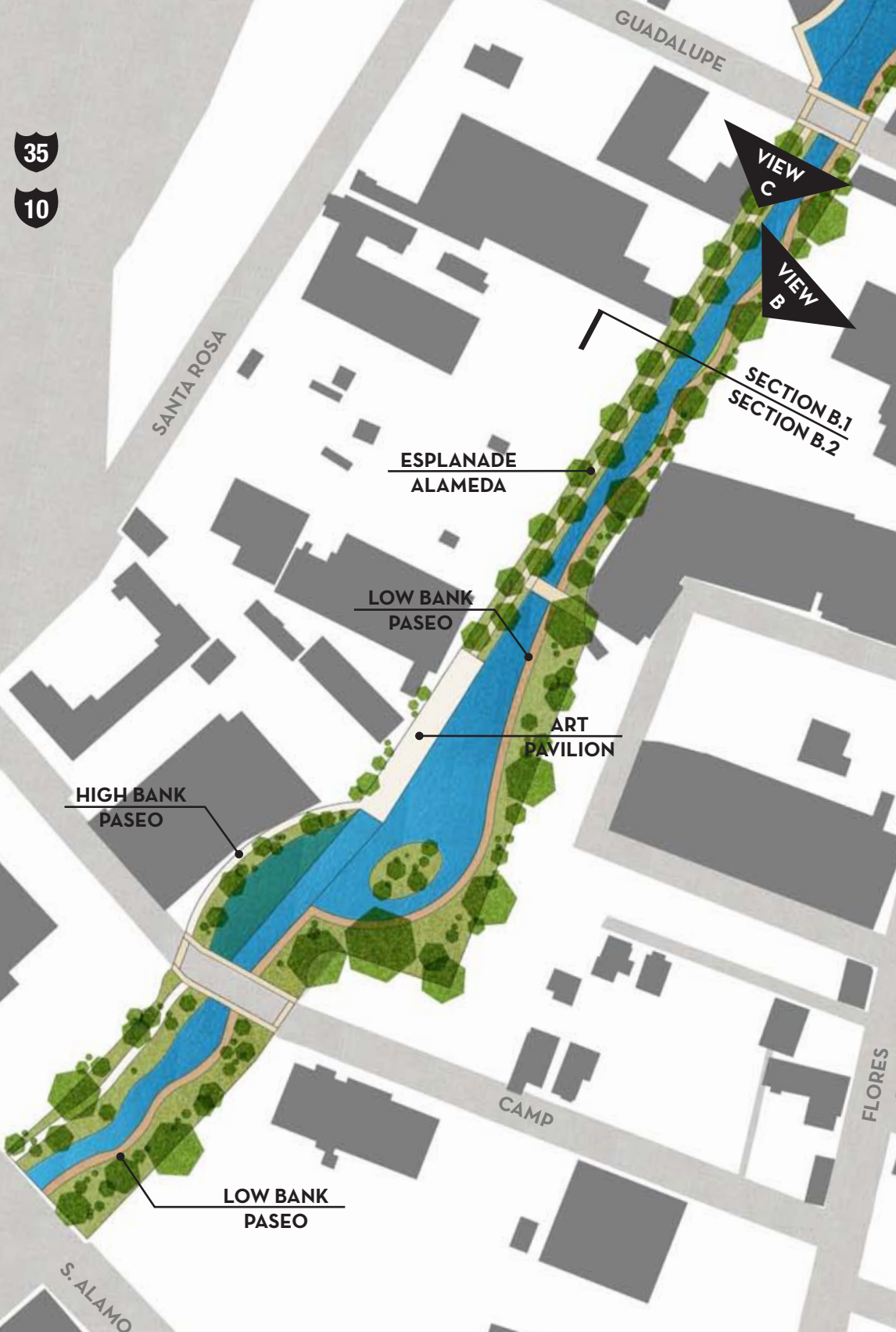
The base flow of the creek would bypass the culvert on the east and return to the existing channel over a small waterfall. The ripples propagated by the waterfall would be reflected at night by lighting within the culvert sections. This view also shows lowering the west bank retaining wall but keeping its lower portion as a divide between the main channel and an aquatic zone that marries the WROC idea of a stormwater garden with this Project's design ethic of engineered wetlands.



CAMPO ABAJO
LOWER FIELD
OPTION A VIEW



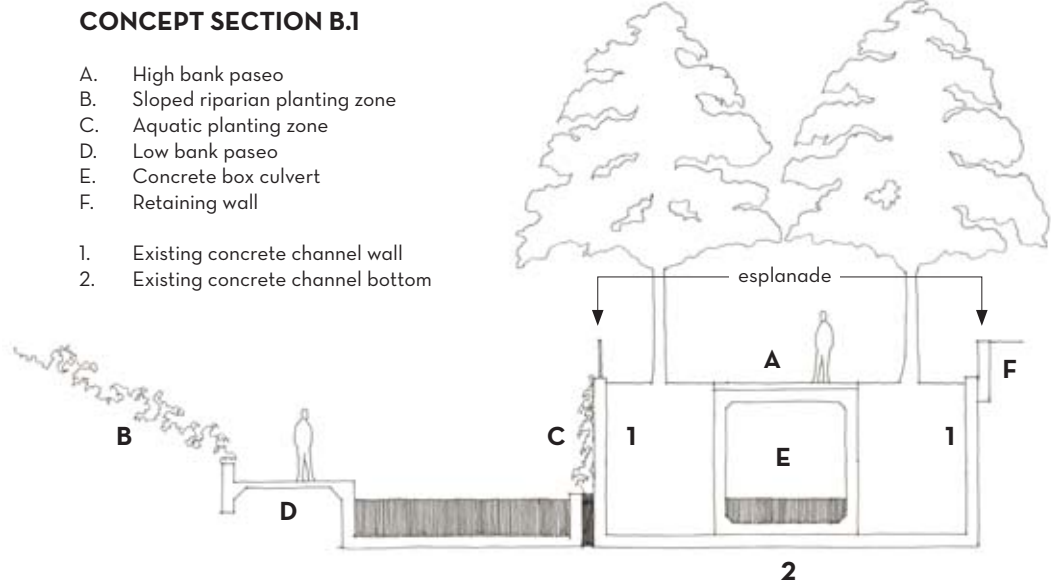
CONCEPT PLAN B



CAMPO ABAJO LOWER FIELD

CONCEPT PLAN B - This approach has a wider channel width afforded by additional acquisition or easement along the east bank. In this scenario the west bank planting buffer occupies the entire width of the existing channel and provides right-of-way for the high bank paseo treated as an esplanade. The existing east retaining wall forms a high west bank with a new course for the creek outboard and edged on the east by a low bank paseo and terraced east bank.

opinion of probable cost = **\$31,440,080**



As the new channel is more constrained between the east retaining wall and adjacent structures in the northern section, a concrete box culvert is shown down the center of the existing channel that would provide the essential capacity for flood control and allow planning medium on either side for an allee of trees. The tree roots can be watered through holes in the box culvert.



CAMPO ABAJO
LOWER FIELD
OPTION B VIEW B



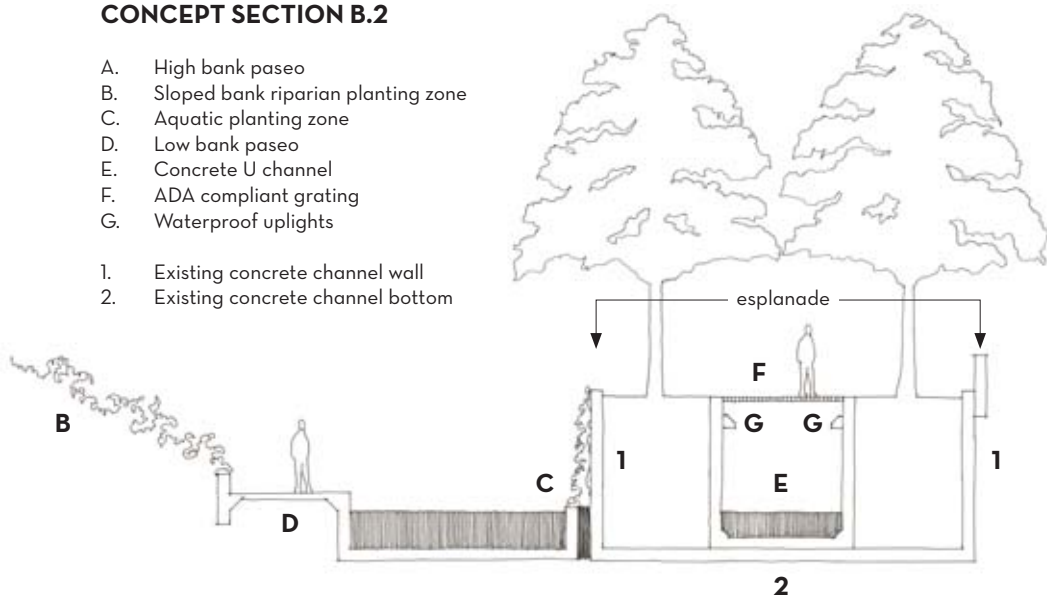
CAMPO ABAJO

LOWER FIELD



CONCEPT SECTION B.2

- A. High bank paseo
 - B. Sloped bank riparian planting zone
 - C. Aquatic planting zone
 - D. Low bank paseo
 - E. Concrete U channel
 - F. ADA compliant grating
 - G. Waterproof uplights
1. Existing concrete channel wall
 2. Existing concrete channel bottom



An enhancement of the esplanade could be using a precast concrete U channel that would support ADA compliant steel grating for the walking surface of the high bank paseo. The grating would allow uplighting to cast light on people and trees and is a unique means of lighting for pedestrian safety and urban drama.

WESTSIDE CREEKS RESTORATION SAN PEDRO CREEK

PROJECT LIMITS: TUNNEL INLET TO SOUTH ALAMO OPINION OF PROBABLE COST

Inlet Structure to South Alamo		All Property		Donated Public Property	
Construction Cost By Section		Option A	Option B	Option A	Option B
1.	Villa Lagunilla Inlet to Travis 1700 LF	\$ 38,180,838	\$ 38,180,838	\$ 38,180,838	\$ 38,180,838
2.	Salon De Alameda Travis to Alameda Theater 600 LF	\$ 12,554,048	\$ 16,618,867	\$ 9,670,664	\$ 13,735,483
3.	Agua Antigua Alameda Theater to Dolorosa 600 LF	\$ 23,978,275	\$ 23,978,275	\$ 23,978,275	\$ 23,978,275
4.	Merodeo Dolorosa to Cesar Chavez 1500 LF	\$ 23,560,537	\$ 23,560,537	\$ 20,368,668	\$ 20,368,668
5.	Canal Principal Cesar Chavez to Guadalupe 1700 LF	\$ 25,126,412	\$ 26,995,038	\$ 25,126,412	\$ 26,995,038
6.	Campo Abajo Guadalupe to South Alamo 1600 LF	\$ 25,592,473	\$ 31,440,080	\$ 24,958,893	\$ 30,806,500
TOTAL:		\$ 148,992,583	\$ 160,773,635	\$ 142,283,750	\$ 154,064,802

The above costs contain:
 25% Design and Management Fees
 20% Contingency
 Property Acquisitions

The water recycling system costs are included in section 3, Agua Antigua,
 but the system will need to be installed wherever construction begins.

WESTSIDE CREEKS RESTORATION SAN PEDRO CREEK

DOWNSTREAM FACE OF SOUTH ALAMO TO IH-35 FLOOD CONTROL PROJECT DOWNSTREAM OF PROJECT LIMITS OPINION OF PROBABLE COST



South Alamo to IH-35	Option A	Option B
South Alamo to IH-35 2500 LF	\$ 9,849,900	\$ 13,920,431
TOTAL:	\$ 9,849,900	\$ 13,920,431

The hydraulics of the San Pedro Creek project are controlled by downstream backwater conditions beginning at IH 35 downstream of South Alamo. However, it resides outside the current project limits and is thus included as a separate entry.

Although outside the scope, the 100 year floodplain upstream of South Alamo cannot be reduced without making downstream flood control improvements. The project team was charged to investigate multiple channel construction options to determine their possible impacts on flooding of the proposed San Pedro Creek project upstream of South Alamo.

The cost data provided in the project's cost summary includes opinions of probable cost to account for these possible downstream flood control improvements. Please note these costs are not included in the overall project cost for the San Pedro Creek project. Future discussions will determine if the proposed downstream improvements are warranted to contain the 100 year floodplain within the proposed project limits.

