

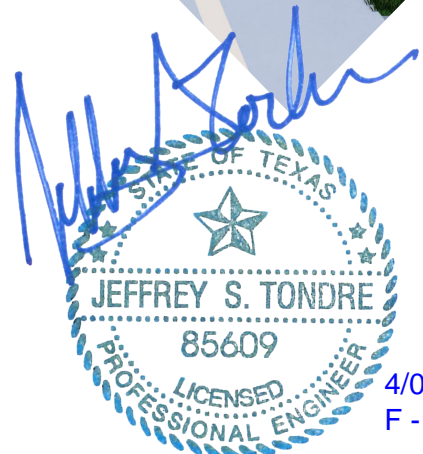


the link

San Antonio River Walk • San Pedro Creek

A Pedestrian Connection
Between the San Antonio River Walk
& the San Pedro Creek Culture Park

Preliminary Engineering Report
March 2024



This PER is issued as a summary of 15% schematic plans related to the project feasibility. It is not intended for permit, bid or construction.

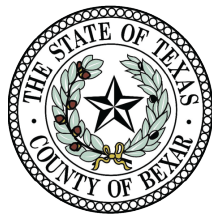


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The Link, River Walk Level Design

Executive Summary

The Link project is proposed in the northern portion of the San Antonio central business district. The San Antonio River Walk runs from north to south through the center of the city, with the San Pedro Creek Culture Park running parallel about one-quarter to one mile to the west. They merge south of downtown. The Link creates a trail connection between the San Antonio River and the San Pedro Creek Culture Park, effectively creating a looped trail system for enhanced circulation within the trail systems surrounding downtown San Antonio.

The goal of The Link is to create a convenient and inviting pedestrian gateway to the San Pedro Creek Culture Park from the San Antonio River. The Link connection will stimulate economic development, bring more visitors to the two connecting trails, provide access to citizens, neighborhoods, students, downtown employees, and tourists to enjoy, increase housing and affordable housing opportunities in the area, and leverage investments made within the area such as the San Pedro Creek Culture Park, and UTSA Downtown Campuses. The project will spur economic development and offer an enhanced experience, with its aesthetic appeal, pedestrian-friendly design, a range of daytime and nighttime activities, artistic elements, and innovative features. Moreover, The Link will serve as a crucial destination gateway to accessing San Pedro Creek Culture Park.

The Link project is planned to be constructed within the public right-of-way of Savings Street, reducing the heat island effect with the addition of trees, water, and amenities.

The Link leverages previous investments in the trail system. The primary objective of the study is to determine the feasibility of project alternatives and to identify potential challenges and determine the approximate cost of construction.



The Link, River Walk Level Entrance



The goal of The Link is to create a convenient and inviting pedestrian gateway to the San Pedro Creek Culture Park from the San Antonio River.

Four options are being considered:

- **The River Walk level option** makes a direct connection 18 feet below street level on the River Walk side and continues at the lower level under the major north-south streets, finally coming up to street level before crossing Camaron Street. This plan minimizes vehicle and pedestrian conflicts for the three major street crossings.
- **The second option presented is a phased plan.** This involves the same design as the River Walk level but breaks the cost for the segment from the river to North Main Avenue if funding for the entire project is not available at one time.
- **The third alternative is the hybrid option.** This option eliminates some of the excavation and retaining walls to reduce costs, but it leaves street-level vehicle and pedestrian conflicts. The major challenge is the transition of 18 feet between the River Walk and street level with an ADA-compliant connection. The short distance between the river and Soledad Street limits the transition which, in this plan, is extended over the eastern two blocks. The major street at-grade crossings of North Main Avenue and North Flores Street will remain with traffic calming measures.
- **The fourth alternative is a full street level option** which would use the existing historic Hugman stairs which currently connect Soledad Street with the River Walk. To provide ADA access, an elevator connection at the River Walk adjacent to the stairs is provided in this option. The sidewalk to the elevator is 10 feet wide, with minimal amenities to reduce property acquisition. At street pedestrian crossings would be enhanced to improve safety, and amenities provided along the route east of Soledad Street.

Engineering completed includes:

A series of landowner meetings, visioning sessions, design charrettes, one stakeholder meeting and three public meetings were conducted to develop a concept that is pleasing not only as a destination place, but also as a conveyance of pedestrians between the two trails and the completion of the Downtown Trail Loop. Based on the refined vision, an engineering assessment of the major components of the project was conducted to determine the feasibility of the project to fit within the existing physical space, utility restrictions,

cultural, historical, and environmental constraints. While there are remaining items that will be recommended to follow up on, no major technical physical challenges to the project were uncovered. We have completed budget figures for the expected project costs. Project costs have experienced a period of hyperinflation during the pandemic, escalating prior estimates. The costs have been adjusted to Spring 2026 bid data based on a 4% inflation rate per year over three years.

Budget figures for the expected project costs were developed by the consultant team and independently reviewed by two expert cost analysis entities. The costs have been adjusted to Spring 2026 bid data based on a 4% inflation rate per year over three years.

- The River Walk level to Camaron Street option project budget is \$135,469,289.
- Phase one only of the River Walk level to North Main Avenue project budget is \$67,860,346.
- The hybrid level project budget is \$86,863,314.
- The complete street level plan is \$43,265,641.

For a video of the River Walk Level plan click [here](#).

For a video of the Hybrid Level plan click [here](#).



Acequia on the Hybrid Level Option

Introduction

The Link project will provide an innovative pedestrian walkway from the San Antonio River Walk to the San Pedro Creek Culture Park for citizens, students, downtown employees, and tourists to enjoy. This project will offer an enhanced experience, with its aesthetic appeal, pedestrian-friendly design, a range of daytime and nighttime activities, artistic elements, and innovative features and enhance economic development. Moreover, The Link will serve as a crucial destination gateway to accessing San Pedro Creek Culture Park.

The Link also completes the river loop of pedestrian trails around the heart of downtown San Antonio. The first leg of the river loop is the River Loop bypass completed in 1929, the loop has been almost 100-years in the making. Many projects followed the River Loop bypass including: extensions of the River Walk, the West Side Creek Greenways, the Mission Reach project, and the most recent being the creation of the San Pedro Creek Culture Park.

While the previous projects followed an existing creek or river, The Link project is a pedestrian connection following the public right-of-way (ROW) of Savings Street that will stimulate economic development and revitalization within the north sector of downtown San Antonio.



The Link: Completing a loop of trails around downtown San Antonio.

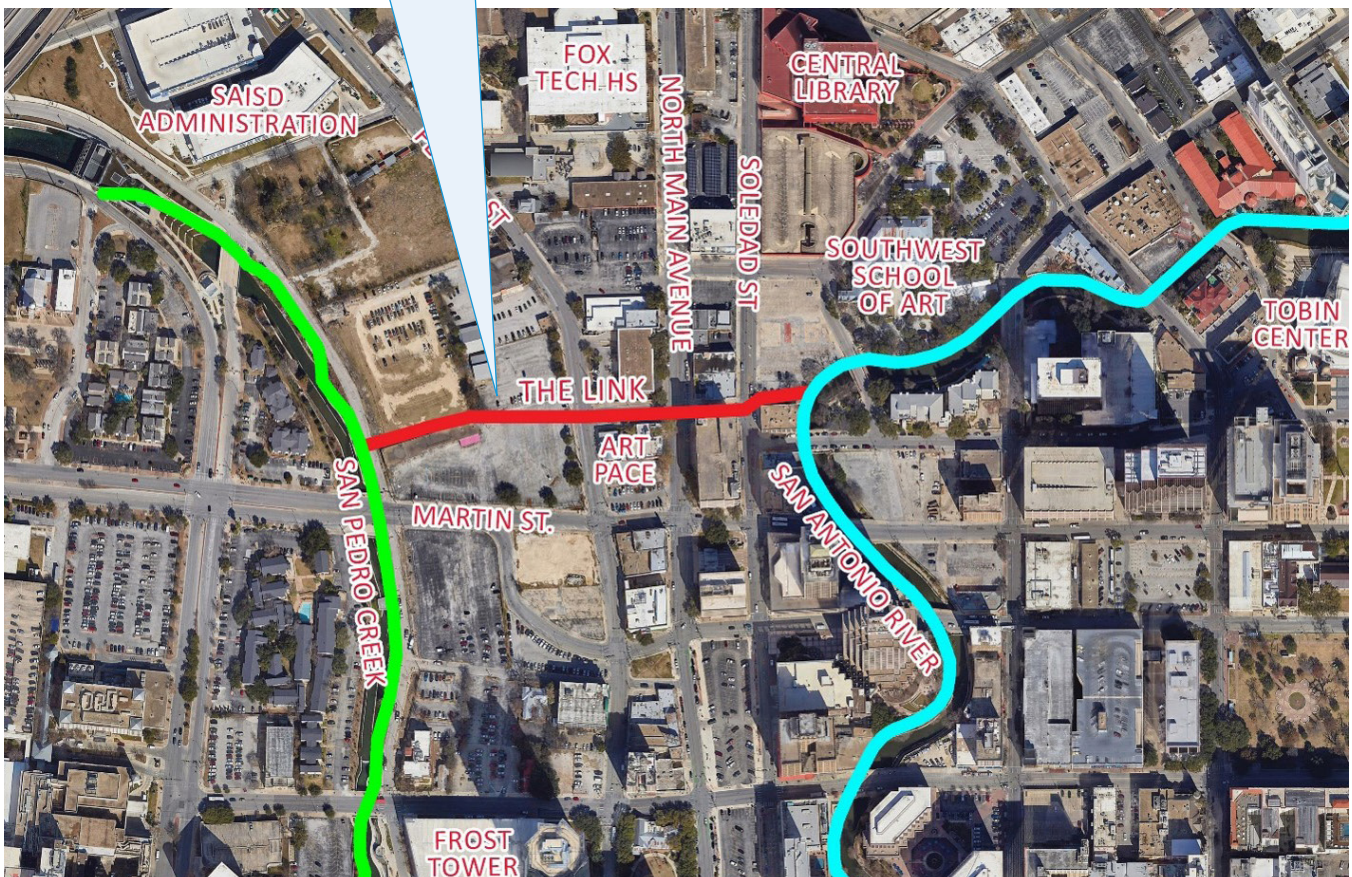


The Link will create a northern connection between the San Pedro Creek Culture Park and the San Antonio River Walk, effectively creating a loop of connecting trails.

The Link project is an approximately 1,100 ft linear pedestrian trail with a clear walking path ranging from 10-14 feet wide, within a 60-foot wide project area. The trail begins at the San Antonio River across from Convent Park and follows the public right of way of Savings Street. It crosses Soledad Street, North Main Avenue, and North Flores Street; traverses three parking lots near Fox Tech baseball field; then crosses Camaron Street at street level, creating a trail link to San Pedro Creek Culture Park. The project is located within the Houston Street Tax Increment Reinvestment Zone (TIRZ). The River Walk Level Concept (Lower Level) will include new bridge structures for every street. The proposed route follows Savings Street with several significant

developments located along the route, including the parking garage for the Wyndham Hotel and the Artpace Museum Gallery. This route will attract new development including hotels, offices, mixed use, housing, and affordable housing.

The purpose of this Preliminary Engineering Report (PER) is to assist in the planning and assessment of the project, to define its infrastructure needs, its feasibility, conceptual design, and establish preliminary cost estimates of The Link project. This includes hydraulic impacts, permitting and mitigation considerations, water resource management, historic and cultural resources, geotechnical conditions, environmental conditions, real estate requirements, agency coordination, utility conflicts, design options, Class 4 Opinion of Probable Construction Cost Estimate, and stakeholder and community engagement.



The location of The Link one block north of Martin Street



Conceptual view of one section of The Link

The San Antonio River Authority (River Authority) has requested four design options for review to connect the trails between the San Antonio River and the San Pedro Creek.

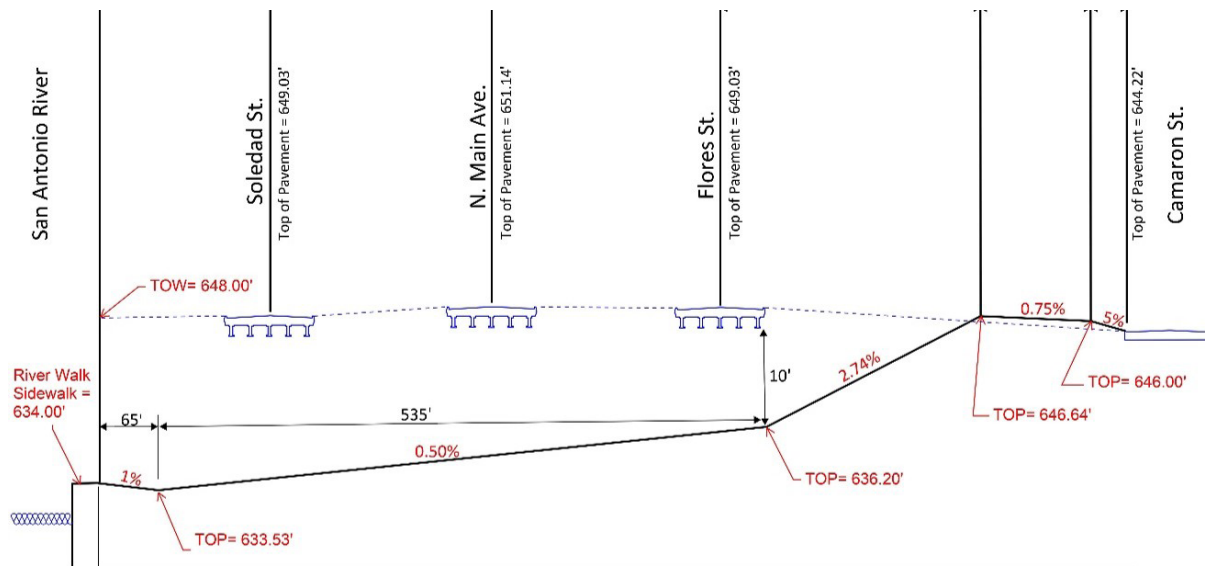
The four options for review within this report include:

Option 1:

River Walk Level Concept (Lower-Level)

This option starts approximately 18 feet below the existing street grade at the San Antonio River, and extends westward under Soledad Street, North Main Avenue, and North Flores Street. Then from North Flores Street it will elevate to a pedestrian crossing at Camaron Street, connecting to Phase 1 of the San Pedro Creek Culture Park.

A plan sheet for the River Walk Level Concept is Appendix A.



Proposed grade leading from the San Antonio River to San Pedro Creek Culture Park

Option 2:

Phased Approach to the River Walk Level Concept (Lower Level)

Phase 1 begins with a lower-level connection to the San Antonio River, then continues westward under Soledad Street from the lower-level connecting to the street-level at North Main Avenue. Phase 1 would end with an 18 foot cut on the east side of Main Avenue, and street access would require the user to back track one block to the intersection of Soledad to use the Phase 1 elevator for the connection between the street and lower level.

Phase 2 will continue the lower-level connection under North Main Avenue to Camaron Street; connecting to Phase 1 of the San Pedro Creek Culture Park sidewalk.

Option 3:

Hybrid Level with River Walk Connection

This is a hybrid level approach starting at the lower-level connection of the San Antonio River, which will transition to street-level at North Main Avenue. It will continue at street-level with raised pedestrian crosswalks at North Main Avenue, North Flores Street, and Camaron Street intersections until it reaches the San Pedro Creek Culture Park sidewalk.

A plan sheet for the Hybrid Level Plan is Appendix B.

Option 4:

Option 4: Street Level with River Walk Connection

This is a street level approach with a connection to the River Walk using the existing historic Hugman stairs which currently connect Soledad Street with the River Walk. To provide ADA access, an elevator connection at the River Walk adjacent to the stairs is provided in this option. The sidewalk to the elevator is 10 feet wide, with minimal amenities to reduce property acquisition. At street pedestrian crossings would be enhanced to improve safety, and amenities provided along the route east of Soledad.

A plan sheet for the Street Level Plan is Appendix C.



Historic Hugman Stairs

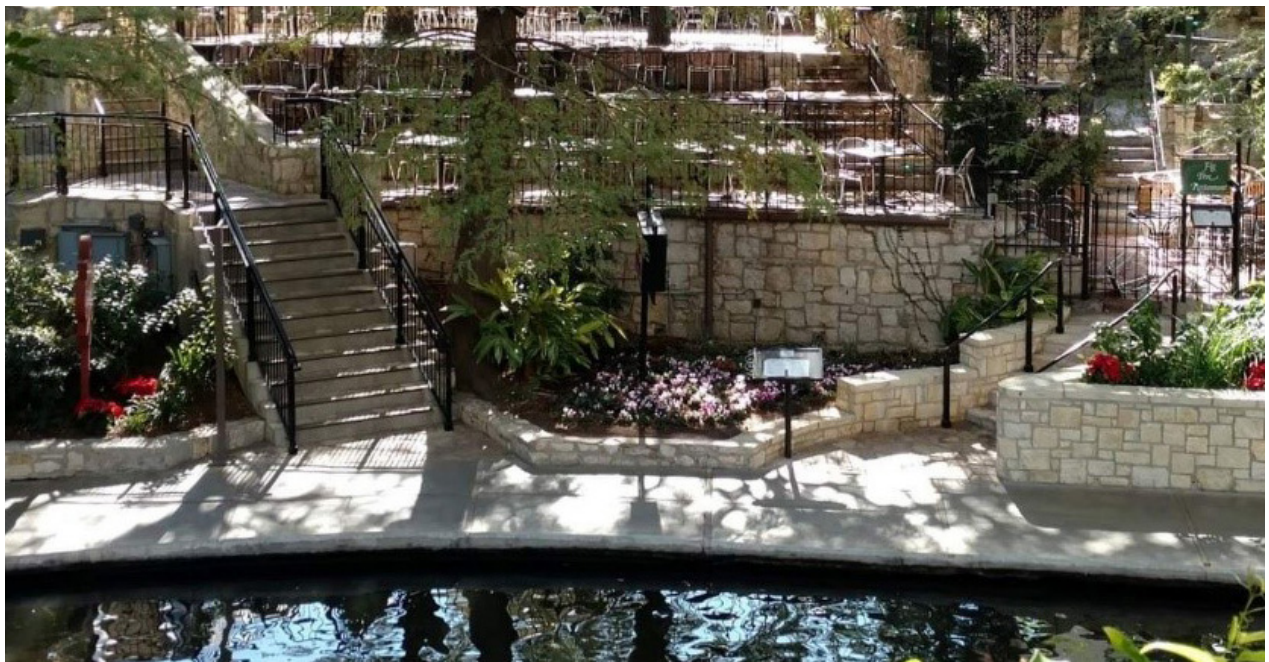
Project Background

The Link project's primary goal is to establish a dedicated pedestrian connection between the historically significant San Antonio River Walk and the San Pedro Creek Culture Park, located along the northern edge of San Antonio's Central Business District. It is essential to understand that the primary purpose of The Link is a pedestrian connection, not a drainage connection between the San Antonio River and the San Pedro Creek, and it is not intended to transfer water between basins.

The River Walk loop bypass was completed in 1929. The subsequent River Walk improvements, funded in 1945 as part of the Robert HH Hugman Plan, extended the River Walk from the loop's northern end to Convent Street. The section from Convent Street up to Pearl Pkwy was completed as part of the Museum Reach while the extension to the south was completed as part of the Mission Reach, both in the 2000s.

The lower San Pedro Creek Greenway was constructed around 2015, connecting to the Mission Reach. The San Pedro Creek Culture Park began construction in 2017, with the fourth and final phase having an anticipated completion date of 2024.

The San Antonio River takes a sharp bend to the East and the San Pedro Creek bends west at a point north of Savings Street, making this the farthest point north. This created the ideal location for The Link. This strategic placement lies in the northern portion of the Central Business District, which is a prime area for redevelopment and revitalization.



A view of Convent Park directly across from The Link connection

Original Vision

The original vision of The Link is attributed to Alvin Groves (1934-2022), and emerged from his extensive experience, including work on projects such as the HemisFair Plaza River Walk extension and various River Walk endeavors across the United States, Canada, Mexico, and Central and South America. The funding approval for the San Pedro Creek improvement in 2015 inspired Al to pursue this concept.

Al enlisted the help of Vickrey & Associates, LLC (Vickrey) to develop the initial concept, setting the foundation for the current project. Al's vision was to walk this route as a celebration of his 90th birthday. Early concepts envisioned a lower-level pathway with a significant portion comprised of water, and there would be a focal high point between North Main Avenue and North Flores Street designed to accommodate bidirectional water flow.

However, with the development of Phase 1 of the San Pedro Creek Culture Park, the pedestrian underpass of Martin Street was eliminated, which consequently brought the San Pedro Creek up to the street-level. This adjustment is one of the significant challenges that was overcome by matching the west end to the pedestrian crossing at Camaron Street.

Project Location and Alignment

The chosen route for The Link project follows the alignment of Savings Street within the public ROW, part of the downtown street grid system in San Antonio. Savings Street is situated one block north of Martin Street. Savings Street extends only two blocks from Soledad Street, crossing North Main Avenue, and ending at North Flores Street. Savings Street is not a major traffic route within the central business street grid system. The City will require a traffic study for the closure of Savings Street to study the impact on the overall street system. This study will take place once the construction is completed on CoSA bond projects in the area.



Savings Street, two blocks long, to be closed to vehicular traffic as the main alignment of The Link

Several proposed alignment alternatives were explored based on a variety of parameters including existing conditions, historical elements, real estate, avoiding conflicts, available ROW, and cost.

The alignment point where Savings Street intersects with the eastern ROW line of Soledad Street is located around 110 feet to the west of the San Antonio River. East of this intersection, there is a public alley that is only 20 feet in width. This alley is located between the building at 454 Soledad Street and a surface parking lot and serves as a public access route to the San Antonio River. It is comprised of a row of columns right next to Soledad Street and a brick walkway leading to steps which connect to the San Antonio River Walk approximately 18 feet below street level.

This access was depicted on the original Hugman plans for this section of the San Antonio River Walk construction. Based on available data, this public pedestrian access way holds historic significance and cannot be removed or significantly altered. Although this alleyway would allow for a straight alignment for this project, because of the narrow access and historical significance it was determined that a different route should be chosen to reach the river.



Historic Hugman Walkway



East end of The Link from Soledad St. to the San Antonio River

South of this public alley is a three-story office building known as 454 Soledad, constructed in the 1920s. Upon review of the building, it appears that the building would not qualify for historic status. To maintain a straight alignment for the link this building would need to be purchased and demolished. However, this may not be feasible due to the high costs associated with the purchase of the building and the real estate.

With the historical significance of the walkway and the cost associated with buying a building, this study determined that a slight shift of The Link’s alignment to the north through the surface parking lot would be the preferred route. This subtle alteration will enhance the aesthetics of The Link by mitigating some of the narrow alignment concerns. We anticipate the maximum ROW width necessary to be 67 feet.

Implementing this proposed alignment will make it necessary to acquire ROW from a property owner, covering an area of approximately 7,000 square feet of the 36,000 sq ft property. This will allow the property owner to retain about half of their current River Walk frontage and give them 110 feet of frontage along The Link. Detailed information about the required ROW, ownership details, and Bexar County Appraisal Parcel Numbers can be found in Table 1.

The juncture of Savings Street with North Flores Street lies approximately 515 feet away from the San Pedro Creek Culture Park. This trail intersects Martin Street and Camaron Street at street level. It remains at street level for roughly 140 feet north of this intersection. Afterward, the trail descends slightly below street level, followed by another return to street level, spanning around 320 feet to the north. However, the trail dips five feet below street level, which isn’t sufficient to pass beneath Camaron Street.

The preferred alignment originates at the point where Savings Street and North Flores Street meet and then progresses westward. It is recommended that the western connection to San Pedro Creek Culture Park be within a 140-foot span north of Martin Street to accommodate the trail connectivity at Camaron Street level. Continuing westward, the proposed alignment traverses the northern portion of a car dealership lot, briefly brushes the Artpace workshop lot, and subsequently crosses the gravel parking lot, which was once the Fox Tech High School baseball field that currently belongs to the San Antonio Independent School District. It is important to note that the precise alignment will require confirmation during the final design phase.

Subsequently, the alignment proceeds to cross the recently upgraded Camaron Street, culminating in its connection to the San Pedro Creek Culture Park.

Information about necessary ROW, ownership particulars, Bexar County Appraisal Parcel Numbers are presented in Table 1.

Table 1, ROW NEEDS FOR THE PREFERRED ALIGNMENT

Property	Owner	Property ID	SF of Required ROW
1	San Antonio ISD	101531	14,286
2	Toomey Family Ltd PTSHP	101509, 101514, 101510, 101511 & 101533	4,442
3	Artpace	1076727	11,210
4	Leibowitz David M & Delia G	110109, 110110, 110113 & 110117	6,530

Existing Conditions

The area around The Link was part of a residential district that was converted to a business district starting in the 1930's. Prominent businesses included a Chevy auto dealership, and Travis Savings and Loan. The area changed as the auto dealerships left the downtown area and Travis Savings and Loan moved to San Pedro Avenue. The newest development along The Link is the parking garage associated with the Wyndham Hotel built in the mid-1970s. More recent development has occurred a few blocks to the north. The City of San Antonio (CoSA) has an existing bond project to reconstruct North Main Avenue and Soledad Street that is scheduled to be completed in the fall of 2023. Camaron Street was recently reconstructed and re-opened in the Summer 2023.

Currently, Savings Street is used to access two driveways. The first driveway serves as an exit from the Wyndham Hotel parking garage and is located at the intersection of North Main Avenue and Savings Street. The exit ramp from the 8-story parking garage follows a spiral configuration. After surveying the parking garage, Vickrey determined that the ramp could be reconfigured to direct traffic toward North Main Avenue instead. Originally, North Main Avenue had a higher traffic volume. This made the exit onto Savings Street the more favorable connection point. However, the closure of a block of North Main Avenue five blocks to the south has caused traffic volumes at this connection point to decrease. As a result, North Main Avenue is currently undergoing reconstruction with fewer lanes.

The second driveway is from the Biomat USA Plasma Center parking lot at the northeast corner of North Flores Street and Savings Street. This parking lot/garage has three driveways, one leading to Savings Street and two to North Flores Street. Removing this driveway should not interfere with entering or exiting this parking area. There is also a service entrance for Artpace. Artpace will still be able to access this gate using the proposed sidewalk. The ROW width of Savings Street is 60 feet. It is proposed to maintain sidewalks on either side of the channel at street level. The width of the below street level excavation is 40 to 50 feet, with an average of 45 feet.



Chevy Dealerships 1970's



The double driveway from Flores St. & Savings St. will require the Savings St. portion to be closed.



The Wyndham Parking Garage currently exits onto Savings Street.

City Bond Projects

The CoSA had two bond projects within the proposed limits of The Link. Both projects are funded by the 2017-2022 General Obligation Bond for Streets, Bridges and Sidewalks Bond Program, approved by citizens in May 2017. Initial concerns about potential conflicts with the City's Elmira Street 2022 Bond Project were addressed, and it was determined that the Elmira project ended about one-quarter mile north of The Link, thus avoiding any overlap.

The first CoSA project involves the improvement of Camaron Street, which serves as the western limit of The Link. It is officially known as the Camaron Street (West Houston Street to Fox Tech High School) project. The second project is the improvement of Soledad Street and North Main Avenue, which intersect with the eastern portion of The Link project limits and is officially named North Main Avenue and Soledad Street (Pecan Street to Navarro Street).

Vickrey initiated contact with the CoSA Public Works Department on March 8, 2023, to request a meeting and seek copies of plans and CAD base files. The City informed Vickrey that the plan request should be made through an Interlocal Data Sharing Agreement between CoSA and the River Authority, with Alex Rodriguez as the River Authority contact. The required paperwork for the Interlocal Agreement was submitted on March 15, 2023. After multiple requests, the North Main Avenue/Soledad Street information, including plans and CAD base files, was finally received on May 11, 2023. The Camaron Street pdf plans were received on May 19, 2023.

As of March, the Project's Manager, David Pulido, P.E., reported that the North Main Avenue and Soledad Street project was approximately 60% complete and was scheduled for completion in October 2023. The reconstruction of Savings Street is planned for late May based on the last updated schedule from February 2023. Acquiring the CAD files was crucial, given that the project was an active construction site, to verify subsurface utilities and gather knowledge about surface improvements that were not yet constructed. The ongoing project has required adjustments to numerous utilities and the construction of new storm drainage in conflict with The Link. Earlier discussions about adjusting the project to minimize potential conflicts were declined by the CoSA due to their obligations to complete the bond project as scheduled.

In March, the project manager for Camaron Street, James Wucinski, reported that construction is set to be completed in April 2023. The project status was substantially complete by the time Vickrey finished the survey. The improvements made through this bond project have enhanced the pedestrian features of The Link project. The CoSA will require a traffic study for the closure of Savings Street to study the impact on the overall street system after the completion of current CoSA bond projects in the area.



Camaron Street nearing the completion of construction



Construction in front of Artpace as part of the Main Avenue/Soledad St. reconstruction

Funding

The current project is funded by the Bexar County Creeks and Trails Program, which has a comprehensive mission focused on environmental and recreational enhancements and fostering economic growth along rivers and creeks throughout Bexar County.

The Link Project was funded up to \$2.0M by the Commissioners Court on October 6, 2020, to conduct the PER. The Commissioners Court granted the funding on July 12, 2022.

Additional funding allocations will be required to continue with the design and construction of The Link.

Scope of Services

The services included in this scope consisted of the following elements:

Survey and Subsurface Utility Location

After obtaining right-of-entry permission, the survey commenced. Survey elements encompassed a boundary survey and resolution. This defined the existing ROW limits of Savings Street, identified the additional four parcels anticipated to be crossed by the project, and facilitated the establishment of a project baseline. This was followed by a topographic survey that gathered ground information within the project limits. Terrestrial LiDAR scanning was employed for this purpose, and the data was processed into a point cloud. This point cloud was then utilized to create existing surface ground elevations. A challenge encountered during the early survey phase was the ongoing construction of two CoSA bond projects that overlapped with the project limits. Despite the limited number of trees within the project area, a tree survey was concurrently completed with the topographic survey. 311 Utility Location services were engaged to mark the paths of underground utilities. This was further supplemented by collecting Subsurface Utility Locations to a Quality Level B. Aerial imagery was obtained as the CoSA bond projects neared completion, serving to enhance other survey data and provide a backdrop for the videos referenced in the Landscape Section.



Survey data is available in Appendix D.

Environmental, Culture Resources, and Historical Background Review

An initial Phase I Environmental Site Assessment (ESA) was conducted, revealing six potential concerns. This was succeeded by a Phase II ESA, which involved collecting soil and water samples across the project area to detect potential contamination that could impact project costs. Additionally, a desktop Cultural Resources Study and Historical Background Review were carried out to identify conditions relevant for project cost estimation.

Civil Engineering

The Civil Engineering phase commenced with utilizing the survey background to create base maps for the rest of the team. The civil team formulated the design layout, managed a dimensionally accurate project layout, and generated elevations for a 3D model. They also prepared the Utility Conflict Matrix, exerting efforts to devise conceptual adjustments and estimate associated costs. All concepts necessitated modifications to stormwater systems to accommodate the project, thereby presenting an opportunity to enhance water quality.

Hydrology & Hydraulic Study

With connections to the San Antonio River and San Pedro Creek Culture Park, the project included an analysis to verify the impacts of The Link project for the two floodplains. The latest hydrology was collected, an existing condition 2-D flood study of the two water bodies was created, and the proposed project was added to the model to confirm impacts.

Landscape Architecture and Architecture

These team members spearheaded the creative aspects of defining project program elements and shaping its aesthetic. This process commenced with an initial visioning session to establish goals, followed by two design charrettes aimed at refining programmatic and visual elements. They continued to refine project layouts, develop presentation boards, and create project videos.

Geotechnical Engineering

Nine Geotechnical borings were completed along the alignment to collect soil data and the depth to bedrock. Samples from the borings were analyzed and a geotechnical report was completed to support the Structural Engineering.

Structural Engineering

Given the significant presence of retaining walls, bridges, and decorative water channels expected to impact costs, structural engineering was engaged to develop preliminary designs that would yield accurate cost estimates.

Mechanical/Electrical/Plumbing Services

Mechanical/Electrical/Plumbing (MEP) services were enlisted to produce dependable cost data concerning various lighting and pumping systems within the project given their classification as high-cost components.

Stakeholder Engagement

San Antonio River Authority staff led stakeholder engagement efforts, with limited support provided by the design team.

The Design Process

Design Principles

Design principles were established and refined throughout the study.

- Leverage the community's investment in the San Pedro Creek Culture Park by providing a continuous linear urban trail for the San Antonio community and visitors to connect the San Antonio River to San Pedro Creek Culture Park.
- Connect neighborhoods, downtown universities and schools, students, public institutions, employers, and workers, through a linear creek trail network connecting to the San Pedro Creek Culture Park.
- Act as a catalyst for future economic development along rivers and creeks. Enhance economic revitalization opportunities in the north end of downtown and along The Link and the San Pedro Creek.
- Complete a flood study.
- Improve water quality and flood control within the urban watershed with water quality management practices, safety, and sustainability.
- Conserve water and natural resources within the design.

Design Goals

Design goals were established to guide the design team:

- Utilize existing public ROW and minimize additional heat island effects.
- Utilize design elements that can be seen at street level to draw people to The Link, the San Pedro Creek Culture Park and the River Walk.
- Integrate the design with the land uses along the route.
- Utilize water and amenities to celebrate historical elements and provide a path to the San Pedro Creek Culture Park using the linear movement of water and people that is safe and pleasurable.
- Reflect on the rich history along the linear trail highlighting aspects of the history of San Antonio.
- Create a modern sense of place by providing amenities that include water features and other interactive amenities celebrating the San Antonio River and the San Pedro Creek Culture Park.
- Provide pedestrian flow, offer pockets of places to enjoy designs, conversations, and nodes of activities.
- Embrace the use of public art to celebrate our traditions of culture, history, and welcome urbanism.



The Design Charrette in process

Design Patterns Developed to Meet Goals

Design Patterns were developed to meet the design goals:

- Public Art
- Shade Elements
- Water Amenities
- Plants and Landscape
- Historical & Cultural Elements
- Street Level Interest: High Bridges & Portals -
Iconic Bridges & Portals
- Iconic Entrance: Iconic Entrance from the River Walk
to The Link and to San Pedro Creek Culture Park.
- Pedestrian Flow: Use of colorful lights, paths, flow of
water, and nodes of activity



Visioning Session

The Link Visioning Session was held on April 13, 2023, at Artpace and was attended by San Antonio River Authority, Vickrey & Associates, Ford Powell & Carson, and the full design team. Artpace and Centro representatives participated and provided valuable input. Vickrey led a site visit tour and walked the alignment of the project. Vickrey presented extensive research of amenities on various projects from around the world as ideas to spur creativity and innovative ideas. The teams broke up into small work groups to brainstorm and sketch various layouts and designs. These ideas obtained in the visioning session were incorporated into the design Charettes. The most significant element that came from this Visioning session was to conserve water and costs with the use of water amenities versus the closed loop water system.

Design Charrettes

Two Design Charettes were held on May 3, 2023 and on May 12, 2023. The Charettes were attended by San Antonio River Authority key staff, and the design team. The design teams collaborated in groups and narrowed down the proposed options to The Link-river level concept and the Hybrid level concept. After the second design charrette, the design teams then progressed the preliminary concepts to approximately 10% design for the stakeholder meeting.

The Design Character Book is Appendix E.



The Design Charrette in process



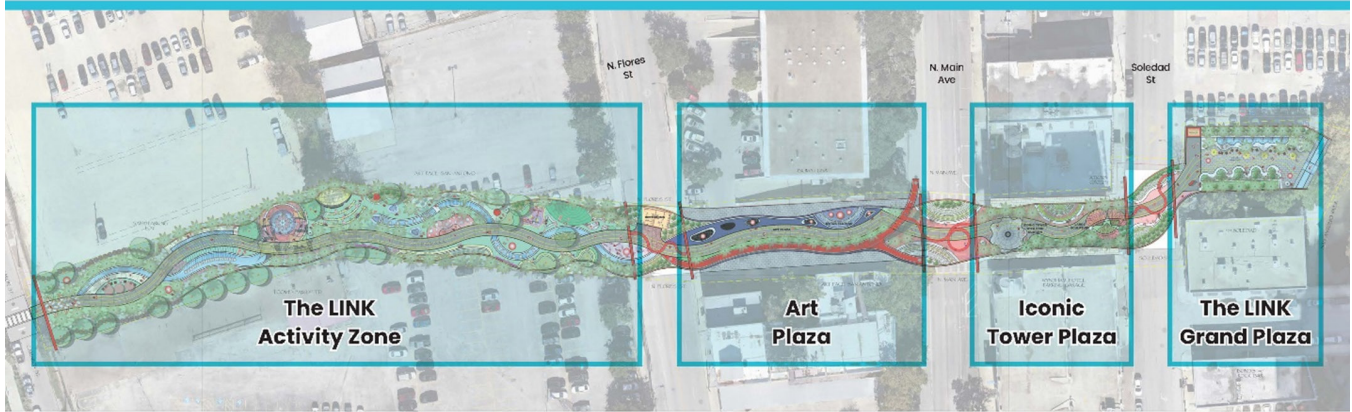
Visioning Session



The LINK Four Character Areas

River Level Option

The Link can be characterized by four distinctive areas based on existing land use, existing buildings and roadway crossings. These existing elements naturally divide the project visually into area segments based on the adjoining buildings and roadway and bridge crossings.



The Link Character Zones

Activity Zone

The area from Camaron Street to North Flores Street is a linear park with activity nodes along the path. It is tree lined and heavily landscaped to provide relief from the hot streets of the city. The major design elements include a large pathway that is lit with leading runnels along with path lights. A water runnel runs in and out throughout this path that includes bubblers, fog, ripples, and pebbles which allows for interactive play and contact of the water. The water runnels will be very shallow, from ½-inch to 3-inches maximum depth for safe interaction with the water elements. An amphitheater will provide small music venues and public platforms for social interaction. A small interactive fitness equipment area will allow joggers an opportunity to stretch and workout. An artificial berm is proposed to be built against one of the retaining walls that will allow kids to play on the hill. A series of curved seat walls and raised planters will provide seating and raised planter beds for human comfort.



Example of adult art-style fitness equipment; free credit futuraproducts.com.au



The water runnel runs through the Activity Zone

Summary of Elements

- This area will be fun and active starting with a curvilinear 2-inch depth water runnel.
- Continuous water channel and water tunnel crossing under the sidewalk.
- Internally lit reed grass and bird statues will cascade over the sidewalk.
- Small amphitheater with seating and overhead string lighting.
- Fun bean-like light fixtures, raised seat walls and planting.
- Artificial turf landscape berm for kids to play on.
- Art Sculpture locations and charging stations.
- Water pods and additional fog bubblers.
- A large lit red ribbon gateway element
- Adult art-style fitness equipment.
- Fog bubblers along stream bed.
- Raised roadway at crosswalk.
- Interactive sculpture.
- Concrete day bed.

Art Plaza Zone

The area between North Flores Street and North Main Avenue is the Art Plaza Zone. The Artpace building and the Biomat USA building flank each side of The Link in this block. A long lineal reflection pool with islands for art will be placed along the north wall along the Biomat USA wall. A taller water feature with a large cross or sculpture of Christ is being proposed for the main sculpture in that corridor.

Three statues are planned for this project. The first is St. San Antonio de Valero in honor of St. Anthony and the Duke of Valero, a Spanish viceroy. Mission San Antonio, which gave the city its name, is the most visited landmark in downtown San Antonio today. The second and central statue is a cross representing the death, burial and resurrection of Jesus Christ. The third statue is St. Peter. The history of St. Peter Prince of the Apostles Catholic Church begins in 1923 when Bishop Arthur J. Drossaerts established a parish to serve a large area encompassing the cities of Alamo Heights, Terrell Hills, the northeast corner of San Antonio and adjoining portions of Bexar County; or St. Peter the Apostle, original name Simeon or Simon, (died 64 CE, Rome [Italy]), disciple of Jesus Christ, recognized in the early Christian church as the leader of the 12 disciples and by the Roman Catholic Church as the first of its unbroken succession of popes. Peter, a Jewish fisherman, was called to be a disciple of Jesus at the beginning of Jesus' ministry. He received from Jesus the name Cephas (from Aramaic Kepa ["Rock"]); hence Peter, from Petros, a Greek translation of Kepa).

An accessible ramp is planned against the south wall along Artpace to provide mid-block access to The Link. Pedestrian access off of North Main Avenue will wind up under North Flores Street bridge.



Art Pods



Concrete Day Bed, credit: Landscape Forms



Fog Bubblers



Small Amphitheater with Seating



Art Photo Op Wall

Summary of Elements

- A red metal ramp is proposed to provide a mid-point road to a river level connection. The underside of the pedestrian bridge will be lit red as well.
- The street level plaza will curve along the walls and provide a viewing area into the Art Plaza.
- The red dots on the plan represent art locations.
- A large water feature will cascade down into the plaza.
- The plaza will have a long linear reflection pond that will be darker in color with art pads within the plaza to reflect the art. This will be very effective at night.
- Proposed curved ribbon gateway elements will be on both sides of the bridge to identify The Link below; ribbons will be lit internally.
- Under the bridge will be a lit red ribbon to carry you through the underpass.
- A restroom is proposed under this bridge with planter walls stair stepping up each side to camouflage the building.
- It was suggested that we add a bicycle police substation within this area for police presence.

Iconic Tower Plaza

The area between North Main Avenue and Soledad Street is bordered by the Wyndam Hotel parking garage and conference space in the Colonel Beck Estates building on the south side. A large free standing metal tower 50-60 feet in height, resembling a light and airy tree with lighting, vines and a water curtain will come up from the plaza to be seen from North Main Avenue.

Summary of Elements

- This is the area we propose a large iconic tower with a rain curtain flowing down the sides. This structure will be 20 feet above the street level.
- Three sets of tower sculpture will also be planned that will be lit with multi-color changing LEDs.
- A multi-level planter bed will project off the north wall.
- The at grade sidewalks will be enlarged for viewing down into The Link.



Iconic Tower



Red Ribbon Accent Light



Elevated Walkway

- Palm trees will continue to line the main walkway which is 10 feet wide minimum.
- LED lights in the walkway will continue throughout The Link.
- Proposed curved ribbon gateway elements on both sides of the bridge to identify The Link below; ribbons will be lit internally.
- Under the bridge will be a lit red ribbon to carry you through the underpass.
- 18-inch seat walls will be provided on each side of the trail with raised planting beds.

Grand Plaza Zone

The area between Soledad Street and the San Antonio River Walk is designated as a grand plaza space for larger gatherings. A large waterwall that allows you to walk through it becomes a gateway to The Link project. This element can also be used for flood control. A series of cascading waterfalls are aligned on the north facing wall as a focal point. The water provides a cooling effect and pleasing noise in an urban space. Curvilinear seat walls provide for group interaction and options in offering different view angles of the plaza. An elevator is proposed to provide ADA access to the plaza and the River Walk.

Summary of Elements

- A gateway entry will be a large waterwall that you will walk through. It will have water on both sides. The water wall will be 16 feet tall by 12 feet wide with an opening to walk through.
- There will be a large plaza with curving running LED lights in the paving surface, to draw you through the space.
- The Plaza will have raised retaining walls on the north and south sides. On the north side will be a series of water scuppers splashing into an at grade level basin. The south side retaining wall will have a curvilinear seat wall that allows for conversation.
- The Plaza will be lined with shade trees and planting areas.
- An elevator is being planned at Soledad Street and the north side parking lot.



Walkway with LED Lights



Grand Plaza Paving

Landscape

Design Character of River Level

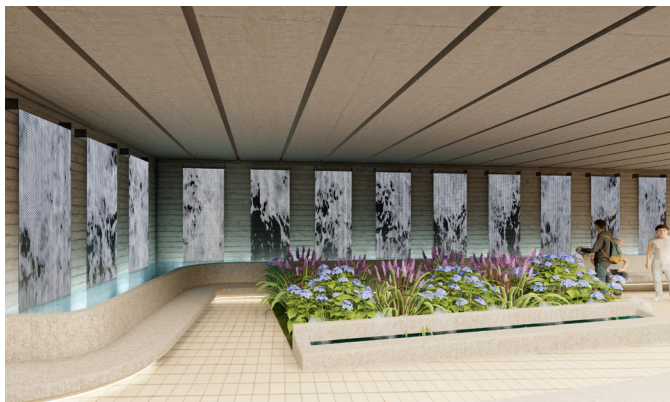
The Link will be more modern in the overall design elements to become a destination for the surrounding community and will blend into the existing and proposed building and living units along The Link. The Link will be modern, fresh and flowing with water, lights, art, color and sounds of life.

The pedestrian corridor link will breathe with life, energy, and bustling activity, infusing vitality into San Pedro Creek Culture Park by attracting individuals, communities, students, enterprises, hotels, residences, offices, dining establishments, and retailers. This dynamic project will offer an enhanced experience, with its aesthetic appeal, pedestrian-friendly design, a range of daytime and nighttime activities, artistic elements, and innovative features. Moreover, The Link will serve as a crucial destination gateway to accessing San Pedro Creek Culture Park and enhancing economic development.

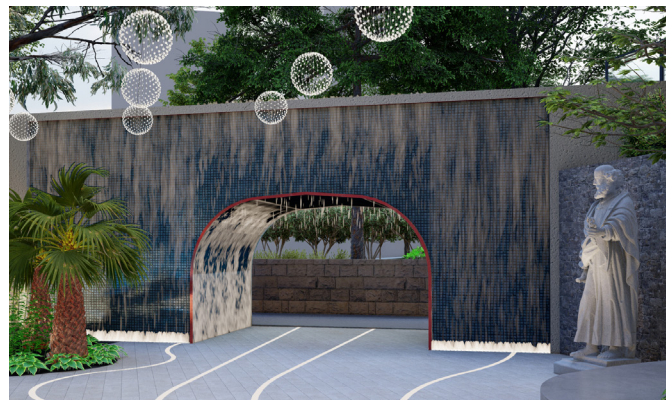
The design charrette process discovered that The Link could be broken down into zones due to the street crossings and adjacent building and land use.

Water Elements

In architecture, water elements add fullness to any space with their physical appearance, natural and symbolic in meaning. In all cultures, water is a part of cleaning and purification associated with sacred values. Water runnels will be used like the acequias that were used for farming. These water runnels will curve through The Link to provide cooling effects and areas for the kids to play in the water. Special water effects such as bubblers, fog and ripples will add to the water experience. Water provides interactive water-based encounters, inventive escapades and thrilling surprises. Water engages the imagination, encourages exploration and can be exhilarating for people of all ages and abilities. Water can create a signature destination that is a community friendly environment that elevates all types of play and interaction with others.



Cascading Waterfall



Gateway Entry Water Feature

Gateway Elements

The curb extension is the gateway to The Link. A gateway is a transition from one mode of travel, or way of life, to another. Gateways set the tone for a traveler’s experience. People intuitively look for clues as to what their new environment will be like as they transition through gateways. First impressions from transitional experiences form lasting assumptions. We are proposing a walk through the water portal gateway from the River Walk to The Link. Light red ribbons are included under the overpass and on each side of the bridges to signify The Link. A tunnel of water over the walkway near San Pedro Creek Culture Park along with long metal reed grass over hanging the entry with internally lighted birds on the reeds flying the direction to the River Walk.

Overhead Architectural Elements

We are proposing airy overhead elements such as translucent materials, shade cloth or vine covered wire trellises to provide area for shade and color. String lighting and large round bamboo textured lighted balls over the Grand Plaza will provide a festive gathering area. Large lighted red ribbon-like structures will also lead you through the underpasses visually. Some shade elements will provide unique shade patterns on the pavement surfaces.

Seating Elements

Seating areas will be incorporated into the raised planting beds typically 18-inches high, some seating will have backs as well. These areas will be curved along The Link in shapes that encourage conversation niches. Custom benches will have LED lights incorporated inside or will be tucked under the seat cap or at the base of the benches.

Play Elements

We suggest that play elements be incorporated into the design and not be stand-alone pieces of manufactured equipment. We are also proposing a large artificial turf berm that will be placed onto the sidewalls for kids to play and slide down on. The Link needs to be inclusive of all ages and abilities.

Fitness Zones

Fitness equipment will be a sculpture element incorporated into the design. Artificial and rubber surfacing will be provided for group fitness and yoga. The area is popular with joggers, and this will provide a place for stopping and engaging with other people. These become very popular people watching areas and encourage and challenges people about their overall fitness and abilities.

Lighting Elements

- LED lights will be incorporated into the paving to draw you into and through The Link.
- Fun, festive overhead lighting will be placed over important venue spaces like the amphitheater, gateways, underpasses, and the Grand Link Plaza.
- Tree and palm lighting will provide a unique ambiance. Seat walls, benches and landscape beds will be lighted with LED bands as well.
- Round Pole lights or light sticks will be utilized at 30-40 feet on center as well. This will provide the continual placement of light throughout the project.
- Wall lights will be placed along the retaining walls to light the corridor and help with overall safety.
- Overhead festive lights will be used in The Link Plaza and at the amphitheater for ambiance.
- Recommend accent lighting on artwork, focal point elements and trees.



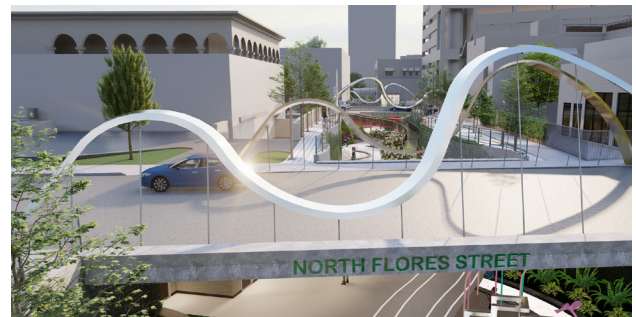
Raised Planters with Seating



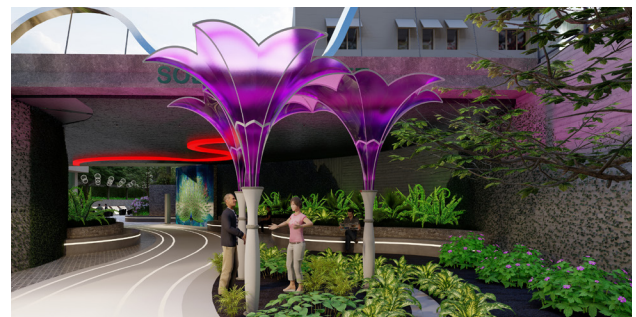
Curvilinear Seat Walls



Water Runnels Structure



Gateways at Overpasses



Sculptural Architectural Elements

Curved Retaining Wall Elements

The large retaining walls will be curved to create a flow as if a river has cut through San Pedro Creek to the River Walk. This will provide a soft effect and flow with the walkway and create unique spaces throughout The Link. The walls will be used for planting vines to help cool the corridor. The walls will also be used for photo opportunities with large colorful artwork for photos. Final colors and textures will be determined in the next design development stage of the project.

ADA Elements

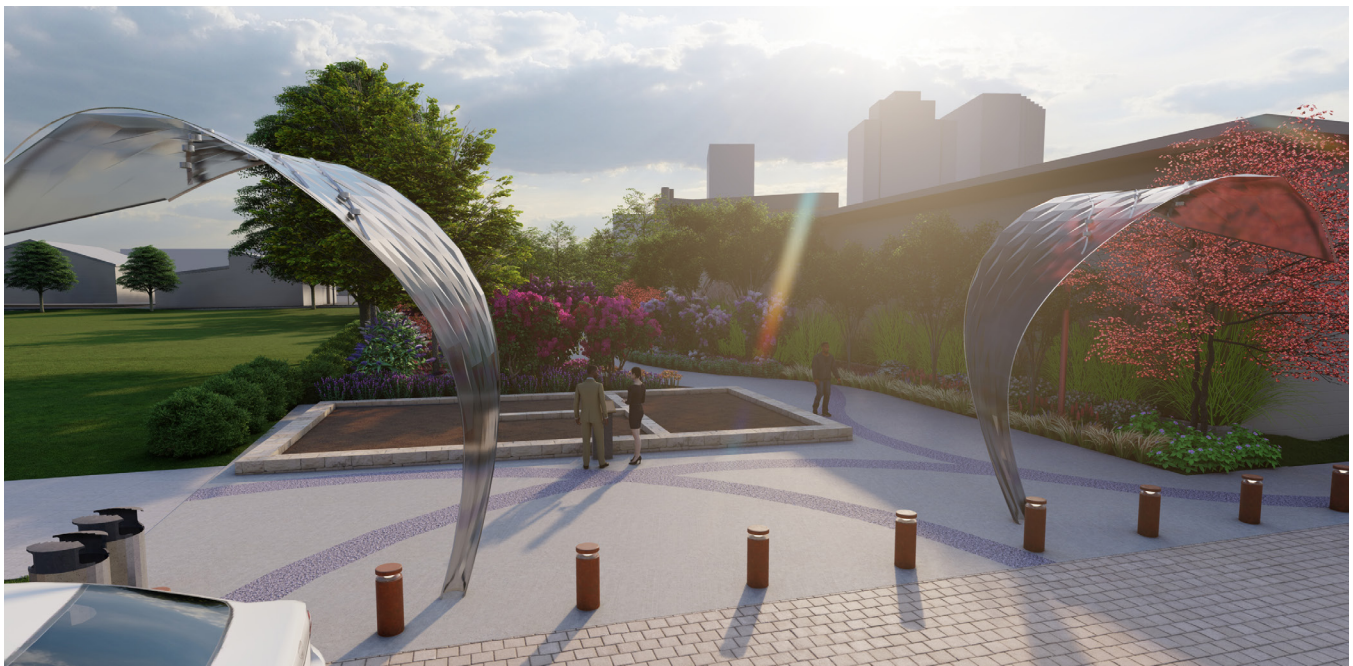
- The consultants want to provide at least three access points for the project.
- One street level connection at Camaron Street to San Pedro Creek Culture Park. One will be mid-block at North Main down to North Flores Street with a floating ramp.
- The third access point will be an exterior elevator at The LINK Plaza and River Walk for access to the River Walk.

Overall Description of the Hybrid Level Concept

The Hybrid Level Concept begins at the west bank of the San Antonio River, connecting with the San Antonio River Walk at river level. This concept runs through a series of stairs and accessible ramps, then passes below Soledad Street, connecting to the street level at North Main Avenue. The area between the river and North Main Avenue will be heavily landscaped. Final plant selections have not been made at this stage, but the intent is to use native, indigenous, and drought tolerant plants throughout the project.

Excavation down to the river level east of North Main Avenue will also allow a connection to the Wyndham Hotel ballroom, located in the basement of the Wyndham parking garage.

At street level, the design intent is to utilize the entire width of the street between North Main Avenue and North Flores Streets for pedestrians to encourage and provide interaction with future development. Consideration will be given to the installation of removeable bollards at North Main and North Flores to allow safe pedestrian traffic.



Architectural Gateway Elements

Pavement scoring is designed to recall the historic 18th and 19th centuries street grid in this area. Architectural gateway elements are used throughout The Link for providing shade and identifying The Link project.

Stylized Anhinga bird wings will serve as portal elements at the crossings at North Main and North Flores Streets and at the connection to San Pedro Creek at Culture Park the far west end of the Link. These elements are also intended to serve as rainwater collectors, funneling water into below grade storage for use as irrigation and in water features during San Antonio’s frequent drought periods.

Linear water features will provide a cooling effect and the soothing sound of gently flowing water to help mitigate traffic noise from surrounding streets.

Summary of Design Elements & Amenities

In addition to the water features, public art from local artists will be installed. The art installations may take the form of painted or tiled murals, decorative tile benches, acid-etched decorative paving, and free-standing contemporary sculpture.

An amphitheater with berm seating for music and other performances is planned. Restrooms will be provided adjacent to the amphitheater. Provisions for food truck parking are located off North Flores Street.

History of the Navarro House

The remnants of the foundation of a house owned by Jose Antonio Navarro (1795 – 1871) are located at the far west end of The Link, adjacent to what is now Camaron Street. Navarro was a statesman, historian, a signer of

the Texas Declaration of Independence, a writer of the Texas State Constitution and an advocate of civil rights for Tejano citizens of Texas.

It is not known if Navarro ever lived in the house, but one of Navarro’s sons lived there for a period. The house where Navarro lived is located at what is now the intersection of South Laredo Street and West Nueva Street.

The foundation has only been partially excavated and archaeologically documented. At some future point, it would be beneficial to fully excavate, document and restore the foundation for historic interpretation.

Legend of the Anhinga

The Native American tribes that historically lived in the area around the headwaters of the San Antonio River believed the Anhinga were messengers bearing wisdom from the great spirits. The Anhinga was also seen as a water or sky spirit connected with weather and storms.

Yanaguana was a spirit who lived in the headwaters



The Anhinga Bird

of the San Antonio River and took the form of a blue panther. The native Anhinga bird would dive into what is now known as the Blue Hole to receive sustenance from Yanaguana. Upon encountering the blue panther, the Anhinga flew out of the Blue Hole, trailing water and creating life in the San Antonio River valley. The indigenous tribes believed that sighting of an Anhinga was a harbinger of rain.

The street level amenities would mirror the amenities of the hybrid option with the exception of minimizing improvements between Soledad Street and the River Walk to minimize the required right-of-way. The Grand Plaza, which will consist of the iconic tower and two trellises, will be moved to the block between Soledad Street and North Main Avenue. An elevator will be provided for ADA access.

Stakeholder and Community Engagement

Stakeholder and community engagement is critical to a successful planning process. The goal is to facilitate meaningful and interactive participation, collaboration, and dialogue between members of the community and the design team to build a shared vision.

The scope of the Stakeholder and Public Engagement Plan consists of landowner meetings, one stakeholder meeting, and two Public Engagement Meetings. The participation and input received from these meetings is positive and provides valuable insight, ideas and innovation that is integrated into the preliminary designs of The Link.

Initial Landowner Meetings

In March 2023, all adjoining property owners, based on Bexar County Appraisal District records, were sent a certified letter requesting a right-of-entry to work on or adjacent to their property. The cover letter included a brief project description and contact information to ask questions. The design team or the River Authority staff had individual communication at least once with every owner by call, Zoom meeting, or in person. Right of entries were received from 6 of the 7 adjoining property owners.

Stakeholder Meeting

The project sponsor provided a list of key stakeholders along with the adjoining property owners, consisting of a dedicated group of citizens representing the interests of neighborhoods, businesses, art, schools, universities, landowners, and public agencies within the downtown area of The Link project.

On June 21, 2023, The River Authority hosted the Stakeholder meeting at the UTSA San Pedro II, Weston Conference Center Room #110.

A summary of the Stakeholder meeting is Appendix F.

The stakeholders circulated and viewed the 60% complete conceptual Design Boards for both the River Level Option and the Hybrid Level Option. The stakeholders had the opportunity to become familiar with the project location, design alternatives, and amenities. They were able to ask questions and provide their comments and input to the Design Team both verbally and in writing.



Stakeholders reviewing plans

Commissioner Tommy Calvert gave a presentation about the project. Commissioner Calvert stressed that the meeting objective was to obtain stakeholder input and he encouraged everyone to provide comments and express any concerns. He described a vision of the design character as: a hip area, modern furniture and amenities, dancing fountains with funnels of sound, a place to create memories, see concerts, artwork, and historical statues. He sees The Link project as a destination surrounded by hotels, housing, and entertainment for all to enjoy -SAISD, UTSA, neighborhoods, downtown workers, residents, and tourists. The project will increase economic development within the North Central Downtown area. He pointed out that the meeting was on the same day as the Summer Solstice which is the longest day of the year and it represents: Renewal, Hope and Optimism which coincides with the vision of The Link Project.

Both design options were presented to the Stakeholders by the River Authority. Mr. Shaun Donovan presented a formal PowerPoint presentation of both the river level and the hybrid level design alternatives in an open format presentation. He also provided a digital walk through of the River Level Option. He followed this with an open comment, question and answer period.

The meeting concluded with another opportunity for the attendees to circulate, ask more questions, provide written comments, and participate in an interactive exercise by placing colored dots on the presentation boards indicating amenities and elements they liked, and did not like.



Results: Constructive comments were received both in writing and verbally. There were 17 interested parties in attendance. The project was supported by 92% of those in attendance including some landowners and community members.

Follow-Up Landowner Meetings

In August 2023 as the preliminary design was being wrapped up, and graphics better illustrating the concept were nearing completion of the current scope, a new round of meetings with the adjoining landowners were held in late August and early September.

Public Engagement Meeting



November 14, 2023, The River Authority in partnership with Bexar County hosted a vibrant Public Engagement Meeting at the San Antonio Public Library - Central Branch at 600 Soledad Street. The public and stakeholders were invited to learn about The Link project at the 90% complete stage of the PER. Mr. Shaun Donovan presented a formal PowerPoint presentation of all 4 design alternative options. (Attached in Appendix C)

Mr. Donovan presented the project overview and goals overview of consultant tasks, schedules, and the work completed, and the following items:

- The River Walk design option and showed the virtual fly-through video of the design and all amenities. The River Walk design option slopes down as the project moves from the street level at San Pedro Creek Culture Park east to the River Walk. Bridges are to be built at street level to allow the project to pass under Flores, Main, and Soledad Streets.
- The Hybrid Design Option and showed the virtual fly-through video of the design and all amenities. The Hybrid Design Option fully incorporates ADA accessibility. It stays at street level from San Pedro Creek to Main Street. Bridges to be built at street level to allow the project to pass under Soledad Street.
- The digital plan of the Street Level Option. The Street Level Option is at street level throughout the project length. An elevator is proposed near the River Walk for ADA Accessibility. This option eliminates retaining walls, bridges, and most excavation costs. Vehicle and pedestrian interactions occur at all three street crossings.
- An outline of the ongoing and upcoming work and the remaining work to be performed, along with a schedule overview. He stated that a final public engagement meeting will be held in early 2024 to communicate project cost estimates.
- Shaun stressed that the project cost estimates were not being presented because they are still being worked on and finalized. This is a preliminary engineering report and feasibility study, not a design project.
- Shaun asked for this to be a collaborative process with everyone providing feedback. He explained that based upon the last public meeting comments, water features were reduced, water usage and consumption reduced, native plantings increased, and sidewalks were widened.
- Mr. Donovan discussed a few of the technical recommendations: the completion of a traffic study, exploring funding opportunities, developing an operations and maintenance plan, and refining the cost estimates.
- Next steps: County taking the lead on these discussions, public entities to be engaged in the conversations, transitioning of the information onto a live link on the County's website to provide access to stakeholders and the public. Again, another public meeting will be in January or the first quarter of 2024.
- Mr. Donovan introduced Commissioner Tommy Calvert, who gave a short presentation about the project. Commissioner Calvert said it has been an amazing journey and thanked the design team and the San Antonio River Authority. He said, "I have traveled to many world class cities, and I believe that if we can get this done, this will make San Antonio's downtown one of the best downtowns in the world." This is a unique opportunity for us to do. He said an independent cost estimator is coming on board to help us identify all costs. And that we will re-convene in January 2024.



Commissioner Calvert said he proposes a new tax refinance zone along the route of The Link. He mentioned that funding sources include a combination from: new development, the Houston Street TIRZ, Federal appropriations with the Infrastructure Development Act, and the cooling of downtown, we may be able to access grants in the Department of Transportation, Department of Interior, and the EPA, future bonds and capital improvement funds from the city, county and other state and local funds. He said the north end of downtown has been under

utilized, and there is an opportunity to recruit high-end hotels, great artists like Artpace, world class art from around the world, and a variety of other cultural amenities. The Link is along the Old Spanish Trail Cultural Corridor, which allows us to bring in other federal, state, and national funding opportunities. The Link also provides a place for us to celebrate our art, family, and culture. It is an opportunity to honor the Buffalo Soldiers Monument, to be near San Pedro Creek Culture Park, and have a downtown central business district tourism gathering place to honor our military history in San Antonio. There is excitement about leveraging investments in the Dream Hotel and other multi-story buildings that may locate along The Link route. This project will also open a connection to the University and the student community.

- Mr. Donovan then opened the floor for discussion, and several attendees asked questions and provided input and comments. Mr. Donovan requested the stakeholders participate in completing the comment card, rank the amenities and elements that they favor on a scale from 1 to 5, and turn them in before they leave. Participants could circulate and watch the River Level Video and The Hybrid video while also viewing



the overall maps of each option mounted on boards and 24" X 36" images of the amenities included within each of the 3 options. The Street Level option included the overall boards for that option, but not a video. Comment Cards were provided which included eight questions, and an opportunity to vote for the option of choice, and to rank amenities on a scale of 1-5. Board displays were revealed to the public after the presentation in conjunction with the videos. Project Location Exhibit Boards were provided for each option:

- River Walk Level Overall Exhibit Boards (2)
- River Walk Amenity Feature Boards (5)
- Hybrid Option Overall Exhibit Boards (2)
- Hybrid Option Amenity Boards (5)
- Street level Overall Exhibit Boards (2) (no video)
- Project Amenity Boards for ranking by Public: 5 Boards with 3 images each, a total of 15 amenity image boards.
- Attendees mingled and discussed the stations and exhibits with the Project Delivery Team while completing comment cards. Comment cards required attendees to rank design elements and provide comments with their feedback.
- Attendees completed and returned comment cards.

Results of Comment Card Questions:

100% of respondents support the project of connecting the River Walk to the San Pedro Creek Culture Park. 82% of respondents prefer Option 1: The River Walk Concept (Lower Level) and 17% of respondents prefer option 1 or 2. 1% of respondents prefer Option 2 – The Hybrid Design. 90% of respondents are in favor of building the River Walk Concept in two phases as funding becomes available. 100% of respondents think the downtown residences, the local community and tourists will utilize this pedestrian gateway to the San Pedro Creek Culture Park. 91.66% of respondents think that The Link project will spur economic development. 8.34% of respondents did not think the project will spur economic development.

A summary of the Stakeholder & Public Engagement is Appendix F.

Cultural Resources

Raba Kistner, Inc. (RKI) was commissioned to carry out an archaeological and historical desktop study for The Link project. The project falls under the review of the Antiquities Code of Texas (ACT) (Texas Natural Resource Code, Title 9, Chapter 191) and Chapter 35 of the Unified Development Code (UDC) of the CoSA (Article VI, Historic Preservation and Urban Design, CoSA UDC).

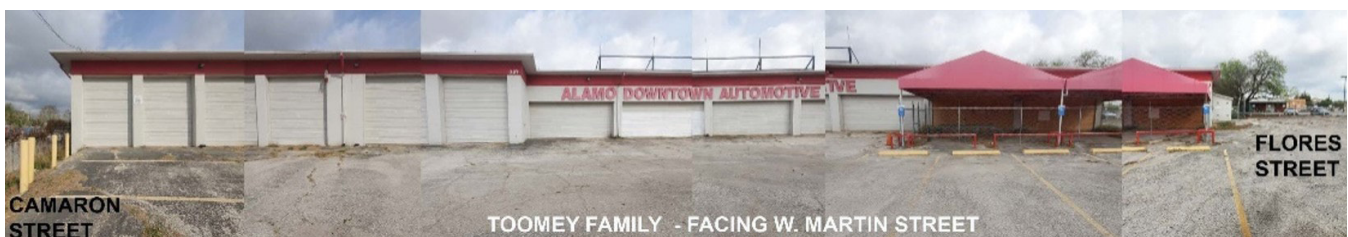
These regulations require the assessment of all proposed improvement activities that could potentially disturb significant historic properties on projects involving federal involvement and state-owned lands. Oversight of ACT compliance is managed by the Texas Historical Commission (THC), while the UDC is overseen by the CoSA Office of Historic Preservation (OHP).

The desktop study's objective is to provide a summary of previous archaeological investigations and assess the likelihood of encountering significant cultural deposits or features within the project area.

The review of archaeological background revealed that portions of the project area have undergone prior surveys. One previously recorded archaeological site – 41BX2274 – overlaps with the western end of the project area. Additionally, the project boundaries intersect with locally designated RIO Districts 3 and 7A, and the eastern end of the project area is within the San Antonio Downtown and River Walk National Register Historic District. Moreover, the projected route of the principal Acequia intersects the project area parallel to the North Flores Street ROW, near the center of the project area. A historic map and aerial photograph review of the project area identified four city blocks, situated in an urban/residential setting that has significantly developed over the City's history.

However, previous archaeological investigations have shown that the structural remains of former buildings and structures that once occupied the property may still be present within the western half of the project area, where existing buildings and infrastructure have not significantly disturbed the soil deposits.

Considering the abundant cultural resources within and around the project area, there is a high potential for encountering intact archaeological deposits, particularly within the western end. As a result, RKI recommends conducting an intensive cultural resources investigation once the final plans for the project have been developed and the total area of impact has been determined.



327 West Martin Street

Historical Background Review & Historic Standing Structures Survey

Acacia Heritage Consulting (Acacia) conducted a Historical Background Review and Historic Standing Structures (HSS) Survey to provide historical and cultural context of the project area. The survey aimed to inventory historic-age structures and landscape features (45 years or older) within the project area and assess potential impacts on historic resources.

During the survey, one historic-age structure, a circa 1940s automobile repair building at 327 West Martin Street, was identified within the project area. However, this building is not currently designated historical and has been determined ineligible for individual listing on the National Register of Historic Places (NRHP).

Additionally, concrete and rock wall features, gates, and stairways leading down to the San Antonio River Walk were found in the project area. These features have the potential to hold historical significance or, at the very least, contribute to the character of the area. Acacia recommends monitoring these features throughout the project.

Seven historic-age structures were also identified immediately adjacent to the project area but were not included in the survey. These structures have varying levels of local, state, and federal historic designations.



Historical steps, part of the original Hugman design not meeting ADA requirements. The steps in the alley will remain

Although the project is not expected to directly impact these structures, Acacia recommends ongoing consultation with the CoSA Office of Historic Preservation (OHP) and the Texas Historical Commission (THC) to mitigate any potential impacts to these neighboring structures.

Based on these findings, Acacia concludes that the proposed project will not adversely affect the historic and cultural resources within the project area nor its immediate vicinity. Therefore, Acacia deems further investigations regarding historic standing structures unnecessary at the time this report was written.

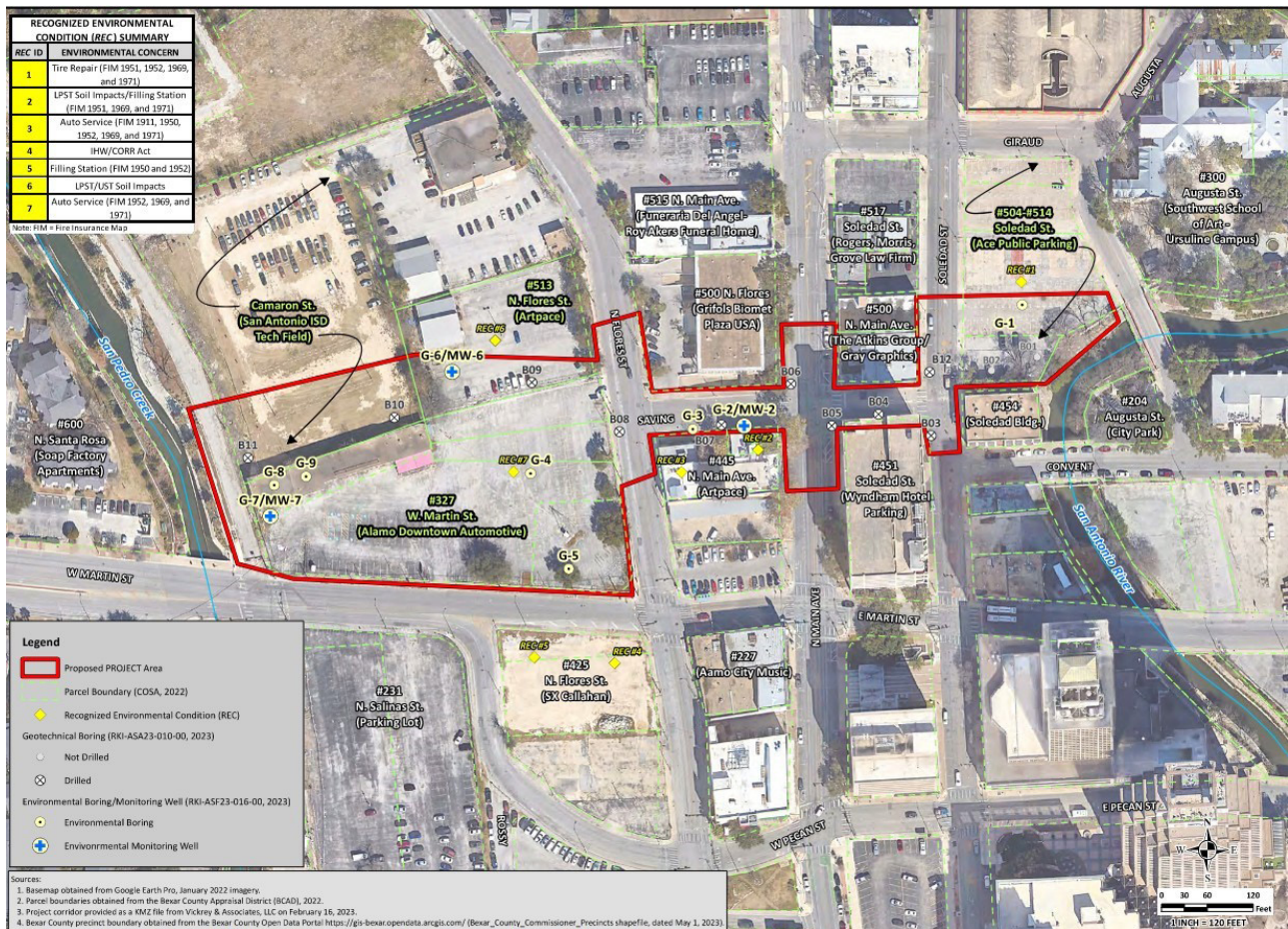
The Cultural Study and Historical Standing Structures Study is Appendix G.

Environmental Site Assessment

RKI conducted an Environmental Site Assessment (ESA) for the Project, completing a Phase I ESA-I study in May 2023. During this study, several recognized environmental conditions (RECs) were identified along the Project

corridor. These include:

- REC #1: A tire shop depicted in the 1952 Sanborn map at 504 Soledad Street.
- REC #2: The Firestone Mastercare Center (LPST ID 105049) at 445 North Main Avenue, which had a historical release of hydrocarbons in 1997 but received regulatory closure in 1998.
- REC #3: An automotive service facility at the southeast corner of North Flores Street and Savings Street Avenue.
- REC #4: SX Callahan at 425 North Flores Street, identified as an Industrial Hazardous Waste Corrective Action facility that conducted remedial activities and achieved regulatory closure in July 2019.
- REC #5: A filling station at the southeast corner of West Martin Street and West Pecan Street, which operated as a filling station in 1950.
- REC #6: Artpace (LPST ID 112418) at 513 North Flores Street, which had a historical release of hydrocarbons in 1997 but received regulatory closure in 1998.
- REC #7: Alamo Downtown Automotive at 327 West Martin Street, where three former automotive repair or service buildings were identified.



Seven recognized environmental conditions were identified in the project area

Based on the findings of the Phase I ESA, a Phase II ESA was deemed necessary. Nine environmental test borings were conducted to obtain soil and groundwater samples.

Throughout the project corridor, disturbed soil conditions were observed, consistent with past land development activities in downtown San Antonio. However, no apparent indications of environmental impact,

such as odors or staining, were observed. Alluvial soils were encountered below the fill soils interval, with no significant environmental impact evident.

Field screening measurements using PID equipment showed non-detectable vapor concentrations of VOCs. Analytical testing results for organic contaminants (VOCs and TPH) in soil and shallow groundwater were non-detectable, indicating no significant residual impacts from previous automotive filling/service station and petroleum storage tank operations.

While elevated concentrations of select heavy metals were identified in soil samples at scattered boring locations, they were well below protective levels for human health in residential land use settings. These elevated metals concentrations are consistent with those seen throughout downtown San Antonio and are not leachable to shallow groundwater or stormwater runoff. Therefore, the heavy metals values reported in this ESA-II study are not considered a significant concern for the project.

The Phase I Environmental Site Assessment is Appendix H.

The Phase II Environmental Site Assessment is Appendix I.

Geotechnical

RKI completed a geotechnical engineering study. During scoping it was decided to include additional geotechnical information during preliminary engineering to support the structural engineer. The structural engineering results in a major cost consideration. The purpose of this study was to drill borings within the proposed improvements to perform laboratory testing, evaluate subsurface conditions, and prepare an engineering report presenting foundation design and construction recommendations for the proposed structures as well as to provide pavement, and sidewalk design and construction guidelines. A total of 9 borings were placed along the alignment with specific borings near potential bridge crossing locations. A boring between Soledad Street and the river was not completed because a right of entry could not be secured.

The Geotechnical Study is Appendix J.

Water Use Study

Different concepts have in terms of quantity and aims to reuse condensate. rainwater harvesting, as it is intercepted by project of condensation from nearby are proposed to be part of make-up collections and

from nearby developments. water plan. A 20,0000 gallon water storage tank is being incorporated into the design. This is a planned volume of about one week of average summer water storage, which can hold any of these sources of water. However, we have also contacted San Antonio Water System (SAWS) to explore using domestic water if needed. In such a case, SAWS would require year-round conservation measures to manage water usage during peak demand periods, specifically in extended above-average summer days.

Initially, there were plans for more free-flowing water, but during the Charrette process and when considering water conservation, most designs have reduced the area of free water surface and increased hardscape elements. Decisions regarding vegetation, including the use of drought-tolerant plants versus aquatic plants, will continue to be evaluated as the project progresses. We are providing our best professional opinion as a



The proposed schematic designs for The Link project include water features along the linear park to create a cooling effect and enhance its appeal.

varying water requirements quality. The preferred plan These concepts include collection of ground water retaining walls, and collection developments. Each of these the primary source of the reuse of HVAC condensation

general guide, given the numerous decisions yet to be made during the final design.

To estimate water needs, we are utilizing the generally accepted Pan Evaporation Data for the San Antonio region, which typically ranges from 4.5 inches during winter months to about 12.5 inches during summer months. These rates depend on various weather parameters like wind speed, air temperature, relative humidity, and solar radiation.

For estimating peaking factors, we are using a 30% increase over the weekly average due to extreme conditions.

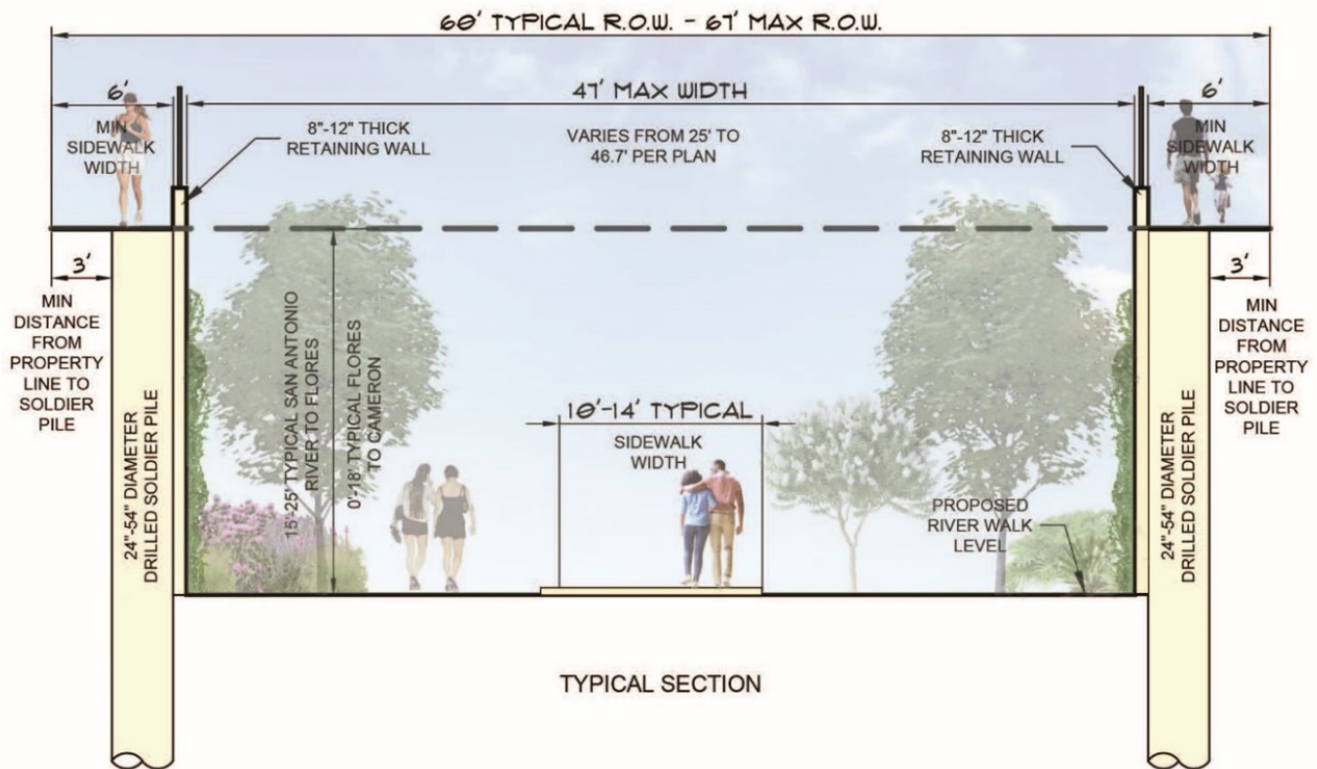
Additional assumptions for estimation include:

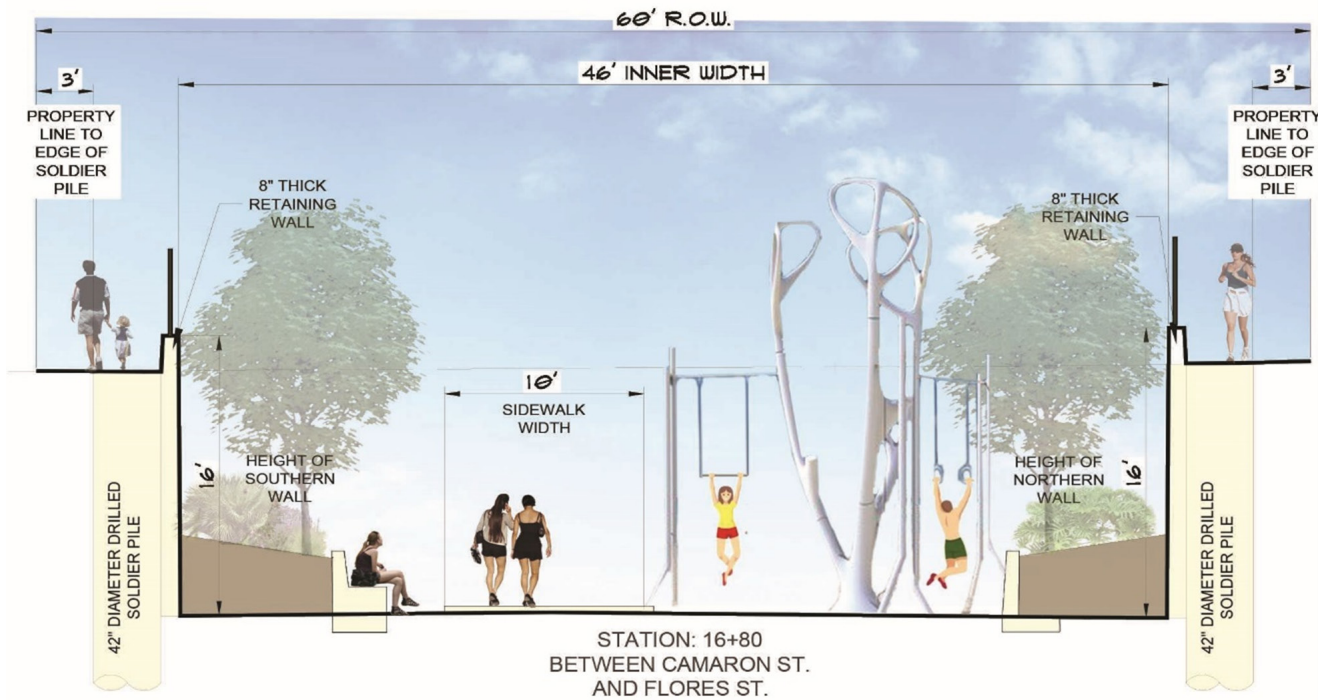
- The project length between the San Antonio River Walk and the east side of Camaron Street is approximately 1,100 linear feet.
- The project width at River Walk level is 50 feet.
- The current coverage of free-standing water is about 20%.
- Vegetation coverage is approximately 20% without xeriscaping, resulting in a similar evaporation rate as free-standing water.
- A peaking factor of 30% is applied for extremely high-average weeks.

The Water Use Study is Appendix K.

Civil Engineering Layout

Based upon the survey layout and the conceptual plans prepared by landscape, Vivkrey prepared horizontal and vertical plans for the River Walk and hybrid level project. Typical cross sections for the project are presented below.





Typical section of the River Walk level.

Drainage

North Flores Street effectively marks the dividing line between the San Antonio River watershed and the San Pedro Creek watershed. In the broader context of The Link, the drainage patterns typically involve eastward flow from North Flores Street to the San Antonio River and westward flow to San Pedro Creek. Notably, the North Main Avenue/Soledad Street CoSA bond project is dedicated to enhancing drainage in the region from North Flores Street to Soledad Street.



The drainage in Savings St. was redone with the CoSA bond project

The enhancements encompass:

- Three inlets are situated near the juncture of Savings Street and North Flores Street.
- New inlets on the southern side of Savings Street at North Main Avenue.
- A storm sewer system that extends north from Savings Street to North Main Avenue, encompassing an area of approximately 4 acres for drainage collection.
- Four inlets at the intersection of Savings Street and Soledad Street.

However, these improvements pose significant conflicts with the construction of the River Walk level project. While the CoSA bond project implemented a 4x4 box storm drain system along Savings Street, it did not address the drainage issue from Soledad Street to the San Antonio River, which involves an

older 24-inch pipe beneath the Hugman steps. This pipe remains visible within the landscape beds adjacent to the steps, including a noticeable hole.

The suggested approach is to reconstruct the drainage system by establishing parallel storm drainage systems along the north and south walls of The Link project. The drainage area contributing south of The Link is relatively small. Similarly, the area north of The Link at the intersection of North Flores Street and Soledad Streets is also small. The region bounded by North Flores Street, Giraud Street, and Savings Street flow eastward into North Main Avenue, where it is collected by the storm drain system. These combined drainage areas account for approximately 4 acres of drainage.

Meanwhile, the drainage accumulated within the lowered section of The Link will be gathered by a third independent storm drain system. This system will flow directly into a rainwater harvesting cistern between Soledad Street and the River. This system is proposed to collect approximately 20,000 gallons, equivalent to approximately one week's worth of the average summer evaporation anticipated for The Link's water elements. Additionally, groundwater amassed behind the retaining walls will be relieved by a French drain system that will connect to this third drainage system and any HVAC System condensate can also be discharged into the third drainage system. This cistern is proposed to collect rainwater, seepage of groundwater from the retaining wall, and condensate from air conditioners. Any overflow from the tank will combine downstream and subsequently be discharged to the San Antonio River following the current drainage patterns.

The Drainage Study and Water Quality Study is Appendix L.

Water Quality

Improvements to water River requires the use of treat the separate drainage within the underground single discharge point into the

Stormwater runoff occurs surfaces such as roads, preventing water from As it flows over these surfaces, that can contaminate the remove these pollutants from

treatment measures are placed within the flow path before the water gets released into the creeks or rivers.

The Link will incorporate a range of water quality features that will treat the offsite drainage leading to the San Antonio River. This report includes proprietary systems for the constructed water quality treatment system. Various manufacturers have different variations, but at the PER stage, we are going to assume that we will use Contech Engineered Solutions as they have recently been installed in the San Pedro Creek Culture Park improvements.

Ideally, treatment is provided in small drainage areas near the source. Treatment System 1 involves replacement of inlets that are required to be fitted with Filterra Bioretention. For the River Walk level improvements, we expect six curb inlets strategically positioned along North Flores Street, North Main Avenue, and Soledad Street.



The Link has a goal to facilitate better overall water quality for the entire area to help preserve and improve the condition of the water being discharged from the proposed development and the surrounding streets.

quality in the San Antonio individual components to areas, that come together drainage system and make a San Antonio River.

when rainfall hits impervious parking lots, and roofs percolating into the ground. the water collects pollutants nearby water sources. To the runoff, water quality

These inlets will address pollutants while enhancing the project’s aesthetic appeal.

Treatment system 2 consists of installing Hydrodynamic separators in line with the existing storm drain branches, as they connect with the replacement system of The Link. This would occur in North Main Avenue, north and south of The Link. These devices are effective at capturing floating and large debris that is unable to flow through the built-in screen.

The third treatment system planned will use Jellyfish® filters for both the north and south storm drain lines, located just east of Soledad Street. The vaults for the Jellyfish® system can be configured to filter small storms, while having a high flow bypass for larger storms. These filters offer an extra layer of filtration to address any remaining impurities that may have bypassed the previous water quality measures. The treated water from the Jellyfish® filters can be directed to the rainwater harvesting vault, and the high flow bypass will be discharged into the San Antonio River through an outfall pipe. The lowered section of The Link will not have additional water quality elements since this area will be able to maintain water quality standards due to the absence of vehicle traffic and insulation from pollution.



Street Paving Grid



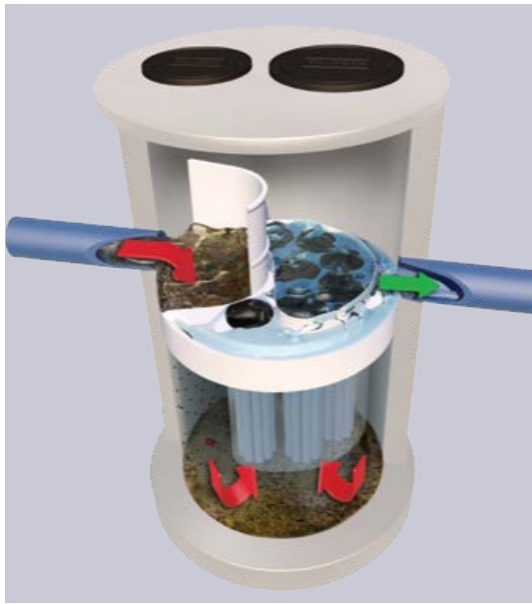
Raised Planters



Grand Plaza Overhead Lighting



Amphitheater



Concept of a Jellyfish® as a third treatment option; credit: Contech Engineering Solutions Jellyfish® Filter Stormwater Treatment Catalog | www.conteches.com

In summary, the project will take a comprehensive approach to water quality. It will use several different features to remove large and small pollutants before discharging into the creek or river. The Link has a goal to facilitate better overall water quality for the entire area to help preserve and improve the condition of the water being discharged from the proposed development and the surrounding streets.

The Drainage Study and Water Quality Study is Appendix L.

Flood Study

The River Walk Level option of the Link project involves excavation of Savings Street which traverses the natural topographic divide between the San Antonio watershed and the San Pedro Creek watershed. The purpose of this study is to identify whether the project's construction will result in an increase in discharge, flood levels, or velocity within either the San Antonio River or San Pedro Creek watersheds.

The current floodplain hydraulic models of both watersheds use a steady state 1-Dimensional model using HEC-RAS software by the US Army Corps of Engineers. The 1-Dimensional models use equations that best model energy losses as water flows downstream within a controlled channel, and only provide crude methods for flow to the sides. The steady flow model calculates the depth of water for a single peak flow, without consideration of actual flood conditions in which the flow increases to a peak and then recedes over time. The ability to incorporate unsteady flow was added to HEC-RAS in 2016, and the addition of 2D dimensional flow in 2016. Since the introduction, these unsteady flow 2-Dimensional models have been accepted as improved models for complex flow conditions.

As the Link project creates a potential connection that is 90 degrees to the general flow of both waterways, and the connection between would only be expected for a short period of time during the peak of the storm, the conditions to be modeled between existing and proposed conditions could not accurately be represented using the current models. With these expectations, the project scope included the development of an Unsteady 2-Dimensional model.

Vickrey developed an Unsteady 2-Dimensional model for the San Antonio River with the limits of study extending from Brooklyn Avenue to Gate 5, along the alignment of The Link, and along the main stem of San Pedro Creek from downstream of the tunnel inlet to the upstream face of West Travis Street, approximately 6.5 miles of stream. RiskMap study, locally known as Digital Flood Insurance Rate Map version 2.0 (DFIRM 2.0), hydrology was utilized as the basis for the discharges used in this study. Discharges were applied to the study area slightly differently than the DFIRM 2.0 hydraulic study since the downtown loop was not previously modeled.

Terrain data used for this study was created specifically for this study. Texas Natural Resource Information Service (TNRIS) Strategic Mapping Project (StratMap) LiDAR published in 2021 classified point was obtained and used as the basis for the digital elevation model (DEM) development for this study. The TNRIS StratMap data is unnatural and does not accurately represent the volume adjacent to the river, a goal of a bare earth model.

A more accurate representation of bare earth and one free of unnatural overbank geometry is necessary to create a stable 2D flood model. A mixture of terrestrial and mobile LiDAR data was collected in 2019 by Maestas & Associates for the city of San Antonio during a biennial cleaning of the river. The TNRIS and city datasets were merged in ESP proprietary software, ESP Analyst. Utilizing classified point data was a key assumption in the development of the geospatial tasks however, the data was not classified. Therefore, reclassification of the data was attempted using automated methods. Classification results required manual interventions that were beyond the scope of work. After meeting with the client, it was decided that no further effort in the classification or augmentation of missing data would be performed during the PER.

Bare earth building volumes have not been captured in the Effective LMMP study nor the DFIRM 2.0 models. This study highlights the need for further study of gate operations, floodproofing of existing structures, the extent of ground floors and basements, and the connectivity to the river. Assessment of flood risks is imperative to the Link project and the continued success of the central business district.

It is recommended that a more accurate terrain be obtained to advance this study. Additionally, the calculated floodplain results indicate that bridges along the main stem of the San Antonio River have a profound impact on flooding. Significant differences were noted between approximate data and the data obtained from existing models. For these reasons, it is recommended that a comprehensive bridge hydraulic survey be performed to confirm the level of impact that bridge openings, rail heights, and abutment configurations have on the calculated floodplain.

Results of the existing conditions study model indicate more substantial overbank flooding than prior studies. This appears to be the result of the more accurate Manning's n-values in the overbank, bare earth terrain, and updated bridge modeling. The combination of all factors indicates that upstream of Houston Street the main channel lacks the capacity to pass discharge without overtopping. Inclusion of the bathymetric data and Gate 5 controls indicate that there is a substantial decrease in WSELs downstream of Gate 3. Consequently, the rapid changes in the channel bottom indicates by the bathymetric data reveal localized velocity increases and turbulence at junctions like those of the river loop. These influences were not captured in previous studies. Modeling of the river loop, control structures, and bridges confirms anecdotal gate operations which are not formally documented. Gate operations, particularly at Gate 5, are critical to the flood protection of the River Loop and main stem downstream of Houston Street.

The proposed conditions study showed that the excavation of the River Walk level plan, as presented, creates a potential path for a floodplain connection between the San Pedro Creek floodplain and the San Antonio River floodplain. The spillover point occurs 150 feet east of Camaron Street at the high point in the trail alignment. The 100-year existing flow conditions show that the maximum spillover depth is about two inches at the very peak of the modeled storm. This could be eliminated by raising the sidewalk by two inches, and based on this, further study was not warranted in the PER project stage. The increasing of the volume of the storage in the San Antonio River basin has the potential to decrease the median floodplain in this study reach by approximately 0.1 feet.

In summary, the Link project River Walk option does not increase flooding on any habitable structures. In fact, it shows a potential for a negligible decrease in flooding in the San Antonio River basin due to an increase in channel storage volume. As the project moves forward, the models should be refined. If spillover between the watershed is deemed undesirable, there are alternatives that can be implemented

to include: raising the sidewalk elevation by a few inches at the high point or installation of a flood gate. Further details are available in the Hydraulic Model Report included in Appendix M.

The Flood Study is Appendix M.

Utility Coordination

Based on utility block map, a survey crew located all visible signs of utilities and markings within the project limits. Based on the block maps and field locations, a utility composite was prepared showing possible locations of said utilities and possible ownership thereof. The composite was utilized to develop a utility conflict matrix for the project site.

In general, all utilities on Savings Street will require adjustment and/or relocation. Utility companies were contacted, and TEAMS meetings were developed to discuss potential conflicts and solutions.

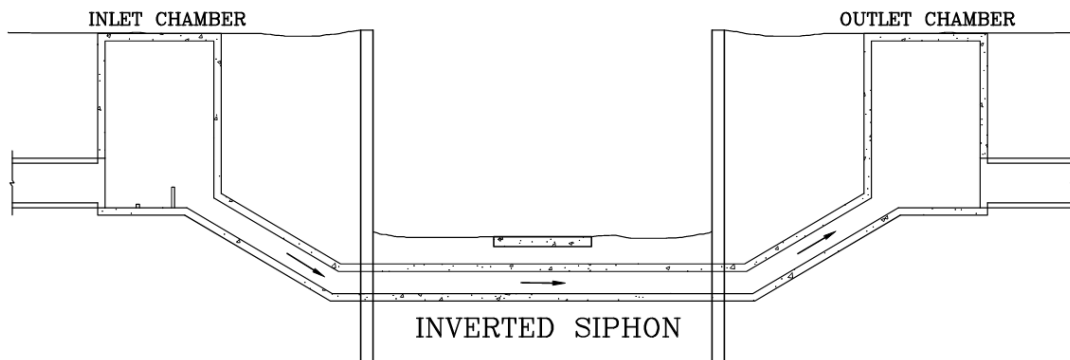
City Public Service (CPS) has determined there are several facilities and duct banks in the area including a major downtown feed, Main Network #4, of power on North Flores Street. This network brings electrical power from the “Five points” substation into the downtown area. There is a major electrical vault serving 500 North Main Avenue and 501 Soledad Street. Another electrical distribution system starts at South Flores Street and Salinas Street, runs along North Flores Street to Martin Street, where it continues along North Flores Street. There are streetlights and overhead lines in the area also. These can be rerouted in conflict with to accommodate the project. There are natural gas pipelines in the project area. These can be relocated, as necessary.

San Antonio Water System (SAWS) has sanitary sewer and water mains in all three streets that will conflict with the improvements proposed within Savings Street. Based upon SAWS’ sewer block maps there is an 8-inch vitrified clay pipe in the ROW of Soledad Street. There is a 27-inch, fiberglass lined brick main within North Main Avenue, and a 20-inch clay pipe main within North Flores Street. The sewer mains within North Flores Street and North Main Avenue are of such an elevation that they will have to be lowered from their current elevation.

This adjustment will require the design and construction of a “siphon main” at these two locations. SAWS staff didn’t object to the use of a siphon but would not commit to the use without reviewing final design plans. The 8-inch clay pipe within Soledad Street may be adjusted by suspension from the new proposed bridge. Water mains in the area consist of an 8-inch asbestos concrete main within North Flores Street, a 12-inch cast iron main within North Main Avenue, and two 8-inch mains within Soledad Street. One of the two mains in Soledad Street is asbestos concrete and the other is cast iron. All these mains appear to be in a position where they can be adjusted or relocated. Relocations could include suspension from the proposed bridge crossings.

There are numerous telecommunication facilities within the project limits. Due to a recent CoSA street and drainage improvement project, several cables and conduits have been replaced by various companies. These replaced facilities are not currently available on the utility standard block maps. Most of these facilities were in place and located during the field data collection operation. Lumen Communications indicates that they have overhead facilities on North Main Avenue and North Flores Street. Their major underground facilities are along Savings Street and Soledad Street and are partially joint trenched with AT&T and Sprint. Block maps of these facilities have been requested. These facilities have been recently adjusted but can be moved again where a

conflict exists. Lumen suggests that a joint use easement and duct bank be constructed along Savings Street as part of this project. This will facilitate communication utility relocation in the area. Verizon is also completing relocation and installation of facilities in the project area. Verizon also suggests a duct bank location and



Two siphons will be needed to lower sewer lines to be compatible with The Link profile.

easement within Savings Street and would like to place relocated facilities attached to future bridges in the area. Google Fiber indicated they do not have facilities within the project area limits.

Attempts to contact Charter/Spectrum Communications were unsuccessful, as were attempts to contact Sprint communications. Location and the effect on their facilities is currently unknown. In addition to the utilities noted above, there is one location of a petroleum steam pipe. The condition and ownership are unknown.

The Utility Conflict Matrix is Appendix N.

Structural

The structural elements of the retaining walls and bridges make up a major portion of the project and budget. The PER was scoped to advance the design of these elements to obtain a more reliable conceptual design and therefore a better construction estimate. The structural design used the geotechnical data collected with the assignment. Danysh & Associates has provided preliminary design in structural retaining systems for this project including cast-in-place conventional retaining walls and soldier pile walls. Please note this preliminary design is based on information made available to us. Further refinement will be based on additional surveying of existing conditions and available construction methods.

Retaining Walls

Cantilever walls are built using reinforced concrete, with an L-shaped, or inverted T-shaped, foundation. This kind of retaining wall consists of a stem and a base footing which sits under the backfill. Soldier pile walls are a series of columns constructed adjacent (tangent) or overlapping (secant) to form structural or cutoff walls. The columns are constructed with reinforced concrete drilled shafts. With limited space behind the walls for base footings, the majority of the walls are assumed as soldier piles. These piles will range from 24 to 54-inches and extend downward to roughly 20 feet into shale. Retaining Walls will be 12 inch thick with 4-foot-wide footings.

Various design assumptions and recommendations have been provided in our full report. Attention should be focused on a drainage system behind the walls. Our design does not include any water pressure and it is imperative that water is removed from behind the walls. We understand there is also a desire to capture the

groundwater and reuse it for the water features. There are various adjacent buildings along The Link. We have provided recommendations for alternative design systems to help reduce any movement of the adjacent buildings. As we enter the final design phase, it will be important to investigate other retaining wall systems that may be more cost effective than using soldier piers.

A survey of all the existing adjacent structures is recommended for the owner to obtain prior to construction. We believe this is necessary to document existing conditions and reduce liability to the design team and owner.

The Bridge System

For the river level project, bridge structural systems are intended for the crossings of North Flores Street, North Main Avenue and Soledad Streets over The Link. Each of these bridges are proposed as single span–prestressed concrete box beams, 28-inches deep. These are chosen because of their low profile (more clearance) and aesthetics. Erecting box beams side by side will also create an automatic soffit eliminating “bird nesting”. The bridge roadway will consist of a 6-inch reinforced cast-in-place concrete slab, shoulders, sidewalks, etc. The spans are in the order of 68 to 83 feet, and the width will match the existing street and sidewalk widths of the street. Abutments on each end of the bridges will be reinforced cast-in-place TxDOT Standard dimensioned to accommodate box beams. Piers will be cast-in-place 42-inch diameter drilled into clay shale (approximately 70-feet). Each end of the bridge will have 4 to 5 piers supporting the abutments. The bridge structural system will be independent of the retaining wall systems.

The Channel Systems

For water features, 8-inch-thick bottom concrete slabs with 8-inch-thick walls are proposed for these “channel” features. They are to be placed over 12-inches of gravel with pond liners in between. PVC water stops are needed at keyed construction joints, and water proofing plaster applied to the inside of the channel.

The Structural Engineering Report is Appendix O.

Permitting

Assuming local funding is used, we anticipate the federal permitting being limited to US Army Corp of Engineering Nationwide permits for the reconstruction of the outfall pipe into the San Antonio River.

State permitting will include permitting with the Texas Historical Commission for the Navarro House site, crossing the acequia, and connection to the San Antonio River Walk sidewalks and walls. Routine permits for TAS and TPDES will be required.

We anticipate most of the required permits will be processed through the CoSA. This includes the Historic Design Review Commission for work in the RIO 3 and RIO 7A overlay districts. The second local element is the closing of Savings Street. Significant additional coordination with utilities will need to continue. The remaining local permitting elements are routine.

Applicable Codes include:

City of San Antonio

- Unified Development Code
- Design Guidance Manual
- Right of Way Ordinance
- Historic Design Guidelines
- Floodplain Development Permits
- SAWS Municipal Separate Storm Sewer System (MS4)
- SAWS Utility Service Regulations

Building Codes

- 2020 National Electric Code
- 2021 International Building Code (IBC)
- 2021 International Fire Code (IFC)
- 2021 International Mechanical Code (IMC)
- 2021 International Plumbing Code (IPC)
- 2021 International Fuel Gas Code (IFGC)
- 2021 International Energy Conservation Code (IECC)
- 2021 San Antonio Property Maintenance Code
- 2021 International Swimming Pool and Spa Code (ISPSC)

State of Texas

- 2012 Texas Accessibility Standards (TAS)
- Antiquities Code of Texas
- Texas Pollutant Discharge Elimination System

Federal

- USACE Nationwide Permits
- Permit 13 – Bank Stabilization
- Permit 33 – Temporary Construction, Access, and Dewatering
- Permit 43 – Stormwater Management Facilities

Project Schedule and Phasing

Studying various funding alternatives was not included within the scope of this report. Funding alternatives will affect the schedule of the project. Currently, Bexar County has committed to funding this project through design with the objective to deliver a shovel ready project. Delays in the selection of the funding alternative will result in delays and ongoing cost escalation. Different funding requirements have different regulatory and permitting requirements that affect both the design and construction phase schedules. As an example, Federal funding might trigger a NEPA environmental clearance process, which could extend for over 18 months or longer.

Project Delivery Selection

For a project of this nature, a Construction Manager at Risk (CMR) process is usually preferred. Although cost considerations are taken into account during the PER stage, value engineering, optimization, and construction techniques may significantly influence the design and project delivery schedule.

Typically, a project like this would utilize the CMR construction delivery method. For the purposes of this study, we are providing the estimated construction schedule and cost based upon the CMR construction delivery method as follows:

River Level Option

Design Phase – 16 months: This process will commence with CMR coordination, including around two months of initial value engineering, followed by 12 months of design work. The permitting process is estimated to take roughly four months, which can be conducted concurrently with the issuance of potentially multiple bid packages. Initial joint bids would cover utility adjustments, followed by a heavy civil package, which would be bid and awarded over approximately three months.

Construction Phase – 24 Months

The construction schedule hinges on the sequence of construction activities. Our proposed sequencing is guided by the assumption of allowing closure of only one of the major north-south streets (Soledad Street, North Main Avenue, North Flores Street) at a time. Upon commencement of construction, the permanent closure of Savings Street is required.

In line with these assumptions, the construction phases will be as follows:

- Phase 1 would extend from the river past Soledad Street.
- Phase 2 would cover the area west of Soledad Street to the west of North Main Avenue.
- Phase 3 would encompass the region from west of North Main Avenue to west of North Flores Street.

Contractor option to include the two phases of Savings Street into any of the three phases above.

Each of these phases is estimated to last around six months. For instance, Phase 1 involves 70 soldier piles, with a production rate of two per day, three weeks allocated for excavation and grading, another three weeks for utilities, and a month for walls. Assuming production time of 15 days per month, this phase is expected to take roughly six months. Typically, a single span bridge construction can be completed in five months.

We propose that the two segments of Savings Street be allowed to fit into any one of these three phases, with the condition that once construction commences, it must be completed within six months to minimize community disruption. Given the limited work planned for Camaron Street, we suggest this segment can be sequenced at the contractor's discretion, but with any closure limited to no more than one month.

This leaves the segment between North Flores Street and Camaron. We propose allowing the contractor flexibility in scheduling construction, provided that heavy construction is completed by the time the third phase mentioned above begins. This would create an additional construction area that could potentially reduce mobilizations by shifting workers. If the contractor can expedite construction to reopen a bridge earlier, we would consider permitting the closure of the next street to start utility and bridge work, again with the stipulation of only one major north-south street being closed at a time.

The aforementioned plan leads us to the conclusion of heavy civil construction within 18 months. We suggest a landscaping and amenity phase lasting four months (which can commence as heavy civil phases are completed), followed by a two-month punch list and commissioning process. This schedule ultimately culminates in a two-year construction sequence.

Hybrid Level Option

The hybrid level would have a similar design schedule of 16 months. The construction schedule can be reduced to 21 months.

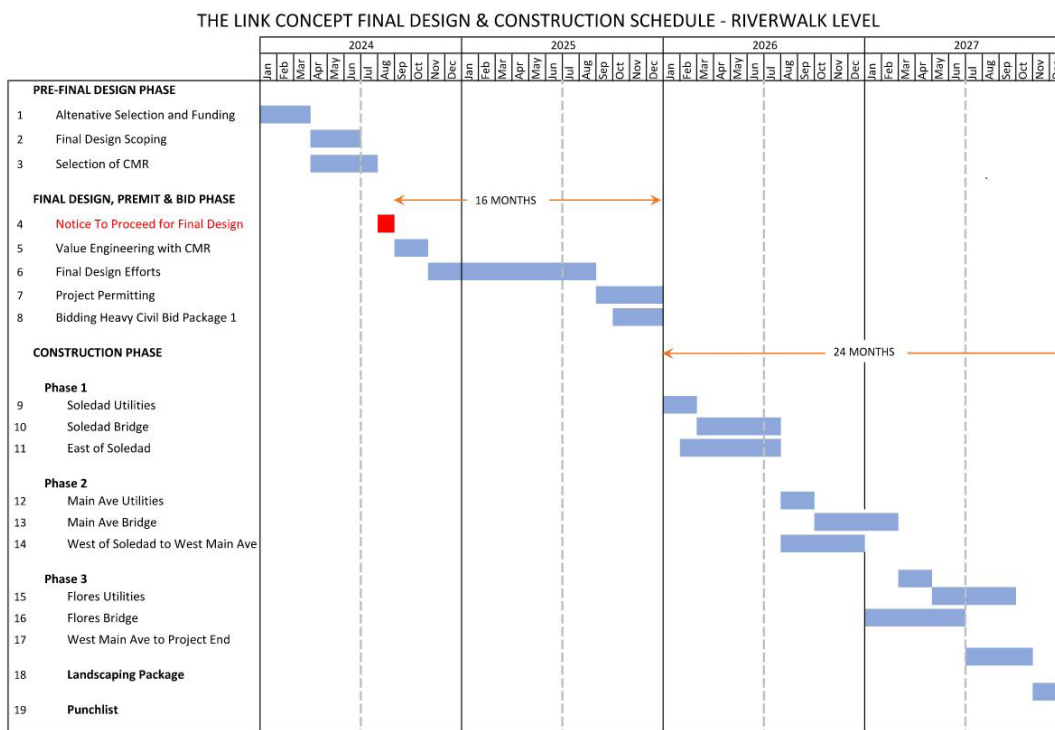
Heavy Civil Phase 1 would be from the river to the east side of North Main Avenue. This would include the utility relocation and bridge construction on Soledad Street.

Phase 2 would be improvements to North Main Avenue to Flores Street, and Phase 3 would be Flores Street to the west end. This would be followed by the Landscape package and punch list.

Street Level Option

The street level option would have an estimated schedule of roughly 12 months, with the major consideration like the other options of only closing one street at a time, with a duration for each street closure expected to last three months. Work between the streets can continue concurrently with a three month finish out.

Both schedules are in Appendix P.



Opinion of Probable Construction Cost

Preparing the cost analysis constitutes a significant aspect of this preliminary engineering report. The project's preliminary cost encompasses various components, including ROW acquisition, soft costs such as program management, design fees, utility adjustments, and construction costs, all detailed within this section. The construction industry experienced a significant period of supply chain disruption and hyperinflation in 2021 and 2022. The continuance was unknown at the start of the PER in 2023. As the PER is concluding, there are some items that are impacted by availability, but inflation is returning to more "normal" and/or average conditions.

Cost estimates for the project were initially prepared by the design team in August 2023. Due to the disruption facts of the prior two years, additional validity of the cost estimates prepared by the design team was desired by the project sponsor. Sundt Construction, Inc was engaged in October 2023 to assist in validating the PER team's estimate. Sundt has been the Construction Manager at Risk for the San Pedro Creek Culture Park project of similar scope in the west end of the project. In collaboration with Sundt, the schedule, unit cost, and bid items were adjusted to develop a final cost estimate.

GNR Estimating Services, LLC provided a second independent cost estimate. A draft version of the PER (with cost removed), schematic plans, and quantities were provided. The Vickrey team responded to questions, and GNR prepared an independent cost estimate delivering a first draft in January 2024. Vickrey reviewed the estimate for notable discrepancies. GNR delivered a final version in February 2024. As an independent estimate, many of the soft costs and some of the construction items required recategorization to make a meaningful comparison. GNR's final estimate was 4% higher for the River Walk alternative; 9% lower for the Hybrid alternative; and 8% lower for the Street level alternative.

After review of both independent estimates with the project sponsor, it was determined that the cost estimate coordinated with Sundt is the most appropriate cost estimate for this report.

Real Estate Cost

The following content is not intended to establish compensation for any of the tracts identified for ROW acquisition to accommodate the project alignment. All acquisition procedures will adhere to the State Guidelines governing property procurement by governmental entities. This process mandates obtaining real estate appraisals for the necessary ROW. As this information is presented related to real estate is intended solely as a planning budget and real estate appraisals were not obtained.

In the context of this Preliminary Engineering Report (PER), ROW acquisition is necessary from four private property tracts. While the precise alignments may undergo refinement as the project progresses, the square footage of each of the four required areas has been computed. An estimation per square foot was derived from the 2023 Bexar County Appraisal District Land Value, converted into a cost per square foot. Considering that two out of the four landowners hold property tax-exempt status, the value of the nearest adjoining property was utilized. The resulting values were then augmented by 250% to establish a budget for the ROW. It's worth noting that all proposed alternatives share identical basic ROW requirements.

Soft Costs were approximated as follows:

- 6% of the construction cost is designated for Program Management Fees to supervise the project.
- 8% of the construction cost is allocated to Design Services.
- 1% of the construction cost is reserved for Permit Fees.
- CMAR General Conditions
- Anticipated water impact fees based on projected water usage (assuming domestic water introduction).
- Archaeological consulting fees during design and construction.

Utility Adjustments: Construction costs related to the anticipated modifications of Public and Franchise Utilities within the existing Right of Way, including CPS Energy, SAWS, AT&T, and Lumen.

Construction Cost: A Level 4 Engineer’s Opinion of Probable Construction Costs has been formulated. This encompasses items such as demolition, excavations, retaining walls, bridges, trails, amenities, landscaping, drainage, and utilities within the project scope. Additionally, this incorporates General Conditions and provisions for traffic control and SWPPP. This was validated by coordination with Sundt and GNR.

Contingency: Adhering to the Class 4 Cost Estimate standards, a 20% Contingency is applied to the Construction Cost and elements that are proportionate to the Construction Cost.

Table 2, COST COMPARISON

Description	River Level	Hybrid Level	Street Level	Phased (Phase 1)
Real Estate	\$9,157,799	\$9,157,799	\$5,649,146	\$3,918,309
Soft Cost	\$12,773,920	\$7,736,972	\$3,877,720	\$6,552,181
Utility Adjustments	\$17,416,176	\$11,461,726	\$0	\$11,461,726
CMAR General Conditions	\$15,233,715	\$10,623,666	\$7,158,560	\$8,740,613
Construction	\$45,778,144	\$25,370,812	\$15,367,072	\$19,600,171
Contingency (20%)	\$20,071,951	\$12,870,195	\$6,410,500	\$10,054,600
Inflation (4% for 3 years)	\$15,037,584	\$9,642,144	\$4,802,644	\$7,532,746
Subtotal	\$135,469,289	\$86,863,314	\$43,265,641	\$67,860,346

Inflation: After a period of hyperinflation, construction cost increases have returned to more normal levels. For this report inflation is assumed to be 4% and the duration presented below is for 3-years for a Bid Date set for Early 2026. As economic conditions fluctuate, it is imperative to track all costs, particularly if the known bid date experiences acceleration or delays.

The Opinion of Probable Construction Costs are Appendix Q.

Conclusion & Technical Recommendations

The Link is a viable project that creates a destination gateway to the San Pedro Creek Culture Park from the San Antonio River. The Link connection will stimulate economic development, bring more visitors to the two connecting trails, provide access to citizens, neighborhoods, students, downtown employees, and tourists to enjoy, increase housing and affordable housing opportunities in the area, and leverage investments made within the area such as the San Pedro Creek Culture Park, and UTSA Downtown Campuses. The project will spur economic development and offer an enhanced experience, with its aesthetic appeal, pedestrian-friendly design, a range of daytime and nighttime activities, artistic elements, and innovative features. Moreover, The Link will serve as a crucial destination gateway to accessing San Pedro Creek Culture Park. The Link project is planned to be constructed within the public right-of-way of Savings Street, reducing the heat island effect with the addition of trees, water, and amenities. The Link leverages previous investments in the trail system.

Begin The Design

It is recommended that the project move forward utilizing the Construction Manager at Risk (CMAR) process, with the initiation of the selection process for a general contractor. To facilitate this process effectively, it is advisable to engage the design team in developing bridging documents. These documents will serve as a crucial link between the design phase and the construction phase, aiding in the procurement of a general contractor through the CMAR process. Furthermore, it is recommended to initiate the design phase promptly to progress the project to a full schematic design stage. This comprehensive design will be instrumental in providing the necessary input for the selected contractor following their appointment. Subsequently, the design phase should continue to refine the project, aiming to achieve a “shovel-ready” status as funding becomes available.

Expanded Landowner Meetings

Landowner meetings were limited to only those adjacent to the proposed route of The Link. It is highly recommended to meet with additional landowners within an expanded area around The Link project. Many of these landowners are in the process of new development and/or expansion plans that could affect this project or may provide additional opportunities for this project. Examples include The Weston Group, Frost Bank, UTSA, and others in the vicinity of the project. It is also recommended that further impacts on area schools, public and private facilities, events, populations, and programmed growth, development, and renovations take place during the design phase.

Stakeholder Meetings

It is highly recommended that presentations be made to other key stakeholders such as San Antonio City Council, Centro, Houston Street TIRZ Board, San Antonio River Foundation, San Antonio Hotel & Lodging Association, UTSA, Fox Tech, Greater San Antonio Chamber, North San Antonio Chamber of Commerce, Hispanic Chamber of Commerce, Fiesta Commission, and other key downtown stakeholders.

Public Involvement

Vickrey recommends that this project continue the public involvement process. This type of exciting high-profile project with a unique character in the downtown area, connecting to the RiverWalk, will be used by the community and tourists and will spur economic development. The absence of this process runs the risk of creating questions and controversy around the project, especially one with three to four different complex options. Additional meetings should take place with the public art community and neighborhood groups.

Traffic Impact Study for Closing Savings Street

The closure of Savings Street will require a study to evaluate the effects of the City Street network. This was included in an early study scope, but before it was completed, it was determined that the PER schedule would overlap at the same time as the Main/Soledad Bond Project construction. The City was contacted but was unable to provide any traffic counts on Savings Street. It was further discussed with City staff that the final City Bond street reconstruction may alter traffic patterns. It would be advisable to commence the traffic study after construction is completed and traffic returns to its normal traffic pattern. Reviews of identified impacts on area schools, public and private facilities, events, populations, programmed growth, development, and renovations should also be reviewed.

Utility Coordination

The scope of Utility Coordination performed within the study was highly restricted and may be sufficient for routine street projects but not for a major trench through the downtown street. We have completed the contracted limited scope of utility coordination. Some utilities responded with what appears to be an overestimate of conflicts needing to be adjusted, and others may have underestimated. The responses received from various utilities will require further investigation, meetings, and utility coordination, including research, data collection, and inventory of programmed and proposed projects, and overlays within the area and utility relocations.

Flood Study

The PER included a study to confirm the impacts that the construction of The Link would have on the river and creek floodplains. Results to date show no impact and a potential to reduce the San Antonio River Floodplain. Further refinements may show the possibility that the project may act as a flood control area which could result in the classification of the project as a flood control project, providing flood control benefits, and an additional project funding source.

Cultural Resources

The agreed-upon scope for Cultural Resources was confined to a desktop review, resulting in the identification of one house foundation feature that tangibly altered the project design. The San Pedro Acequia is known to cross the project alignment, but the alignment is unknown. State permitting will usually require a project to acknowledge the general location. It serves as the inspiration for the hybrid water features near Flores Street. It is recommended that further investigation be conducted either early in the final design phase or during the exploration of potential flood control measures.

Commission an Economic Impact & Benefit Study

It is recommended that an economic impact and benefit study be performed to study and measure the proposed economic impact that this project will have in attracting new business, increased tourism, and housing to San Antonio. Also, how much in total business output dollars, jobs, household income, property values, and the measure of new activity will be generated in the economy due to this project. This analysis will determine the economic return on investment and is very important.

Funding Alternative Planning

It is recommended that a funding study be carried out to study various funding alternatives. The project is located within the Houston Street TIRZ which will allow for the project to pay for itself over time with the reallocation of ad valorem taxes over the base tax value within the zone. Many other funding sources should

be studied such as City of San Antonio Bond funds, Linear Parks, Parks & Recreation, Bike MPO, flood control dollars, Grants, TIF/TIRZ, Hotel Occupancy Tax, San Antonio River Authority, Hotel Occupancy Tax, and private contributions.

Branding and Messaging

A branding study be performed to create a vibrant branding and messaging plan to increase the identity of the project. This may also include website content and updates, e-newsletter content, preparation of Zoom presentations, photography, open houses, and other special events.

Operations and Maintenance (O&M)

An implementation strategy be developed for The Link. This linear park will fall within a high-level maintenance recommendation based on being ranked among the top U.S. cities to visit in 2023. It will also be a main corridor linking the River Walk and San Pedro Creek Culture Park. This will allow agencies to look at ownership and responsibilities within the built project. It is imperative that O&M budgets reflect a standard of care to ensure function and that amenities remain attractive. The O&M manual will address issues ranging from irrigation, drainage, water feature operations and management, turf maintenance, hardscape maintenance, trash collection, special events, and programming to integrate pest management.

Commission Artist

We suggest drafting an artist call to distribute through PublicArtist.org. This can be local, statewide, or nationwide. We would recommend the selection of the artist early in the next phase of the project to allow the art to be designed into the project, rather than an addition.

Vibration Monitoring

Vibration monitoring to monitor potential impacts on existing adjacent buildings during demolition, excavation, and construction is recommended. The CMR installed vibration monitors on every phase of San Pedro Creek Culture Park.

End of Report

In the heart of progress lies the commitment to vision & planning and the dedication to shaping a vibrant future. As we conclude this preliminary engineering report, let us remember that our collective efforts today will sculpt the downtown landscape of San Antonio for generations to come.

