



# Buffalo Bayou Park

Houston, Texas

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# 2019 RUDY BRUNER AWARD

PROJECT DATA



**RUDY  
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AWARD**  
FOR URBAN EXCELLENCE

# PROJECT DATA

Please answer questions in space provided. If possible, answers to all questions should be typed or written directly on the forms. If the forms are not used and answers are typed on a separate page, each answer must be preceded by the question to which it responds, and the length of each answer should be limited to the area provided on the original form.

Project Name **Buffalo Bayou Park** Location **105 Sabine Street** City **Houston** State **TX**  
 Owner **Buffalo Bayou Partnership, City of Houston**  
 Project Use(s) **Open Space, Recreation, Visitor Center, Event Space (festivals, concerts, etc), Cafe, Hike & Bike Trails, and Bike & kayak rentals**  
 Project Size **160 Acres** Total Development Cost **\$58 Million**  
 Annual Operating Budget (if appropriate) **\$2.1 Million (increasing with inflation)**  
 Date Initiated **2010 (Master Plan Start), 2013 (Construction Start)** Percent Completed by December 1, 2016 **100%**  
 Project Completion Date (if appropriate) **October 2015** Project Website (if appropriate) **buffalobayou.org/visit/destination/buffalo-bayou-park/**  
 Attach, if you wish, a list of relevant project dates

**Application submitted by:**

Name **Kerri Da Silva** Title **Marketing Manager**  
 Organization **SWA Group**  
 Address **1245 W 18th Street** City/State/Zip **Houston TX 77008**  
 Telephone **(832) 499-5740 (mobile)** E-mail **kdasilva@swagroup.com**

**Perspective Sheets:**

Organization	Name	Telephone/e-mail
Public Agencies	<b>Clifford Perry. City of Houston, General Services Dept.</b>	<b>(832) 393-8081 Clifford.Perry@houstontx.gov</b>
Architect/Designer	<b>Scott McCready. SWA Group</b>	<b>(713) 868-1676 smmcready@swagroup.com</b>
Developer	<b>Anne Olson. Buffalo Bayou Partnership.</b>	<b>(713) 752-0314 X 102 aolson@buffalobayou.org</b>
Professional Consultant	<b>Guy Hagstette. Kinder Foundation.</b>	<b>(713) 529-5537 ghagstette@kinderfoundation.org</b>
Community Group	<b>Jaime Gonzalez. The Nature Conservancy</b>	<b>(713) 230-8167 jaime.gonzalez@TNC.ORG</b>

**Other**

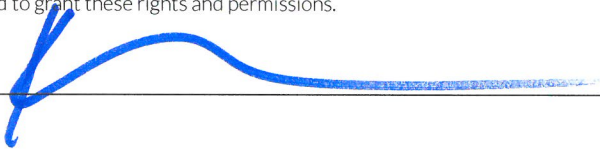
**Stephen Korn. Artist** **(413) 531-5443** **stephenkorns@gmail.com**

Please indicate how you learned of the *Rudy Bruner Award for Urban Excellence*. (Check all that apply).

- Direct Mailing
- Direct Email
- Previous Selection Committee member
- Professional Organization
- Professional
- Previous RBA entrant
- Online Notice
- Other (please specify)
- Facebook
- Social Media
- Bruner/Loeb Forum

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Signature



Date **12/12/18**

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# 2019

# RUDY BRUNER AWARD

## PROJECT AT-A-GLANCE



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# PROJECT AT-A-GLANCE

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This sheet, the Project Data sheet, and the representative photo will be sent to the Committee in advance as the *Project Overview*.

Project Name \_\_\_\_\_

Address \_\_\_\_\_

City/State/ZIP \_\_\_\_\_

1. Give a brief overview of the project. Approximately 500 words.

2. Why does the project merit the *Rudy Bruner Award for Urban Excellence*? You may wish to consider such factors as: effect on the urban environment; innovative or unique approaches to any aspect of project development; new and creative approaches to urban issues; design quality. Approximately 500 words.

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# 2019

# RUDY BRUNER AWARD

## PROJECT DESCRIPTION



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# PROJECT DESCRIPTION

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1. Describe the underlying values and goals of the project. What, if any, significant trade-offs were required to implement the project? Approximately 500 words.

2. Briefly describe the project's urban context. How has the project impacted the local community? Who does the project serve? How many people are served by the project? Approximately 500 words.

## PROJECT DESCRIPTION (CONT'D)

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3. Describe the key elements of the development process, including community participation where appropriate. Approximately 500 words.

4. Describe the financing of the project. Please include all funding sources and square foot costs where applicable. Approximately 500 words.

5. Is the project unique and/or does it address significant urban issues? Is the model adaptable to other urban settings? Approximately 500 words.



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# 2019 RUDY BRUNER AWARD

COMMUNITY REPRESENTATIVE  
PERSPECTIVE



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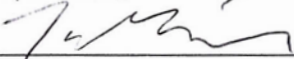
# COMMUNITY REPRESENTATIVE PERSPECTIVE

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This sheet is to be filled out by someone who was involved, or represents an organization that was involved, in helping the project respond to neighborhood issues.

Name **Jaime González** Title **Urban Conservation Programs Manager**  
Organization **The Nature Conservancy** Telephone **281 660-6683**  
Address **1800 Augusta Dr., Suite 240** City/State/ZIP **Houston/TX/77057**  
E-mail **jaime.gonzalez@tnc.org** Website **nature.org**

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Signature  Date **Dec 12, 2018**

1. How did you, or the organization you represent, become involved in this project? What role did you play? (300 words max)

I played a role in my previous capacity as the Community Conservation Director at the Katy Prairie Conservancy. I had the pleasure of serving on Buffalo Bayou Park's ecological technical planning committee. Other committee members represented such groups as the Sierra Club, Houston Audubon, Bayou Preservation Association. We advised Buffalo Bayou Partnership on such issues as native vegetation, riparian plantings and habitat. My focus was integrating native meadows and prairies into the park's landscape. Before Houston was built, most of the area was prairie. In Buffalo Bayou Park, we wanted to restore plants that were previously along the waterway. By planting native milkweeds, wildflowers and grasses we were able to provide structure and texture throughout the park, and draw high-impact pollinators. It is important to note that the park was designed to create a series of "ecotones" (riparian forest, grassland and the bayou itself) or areas where two or more habitats come together. My involvement in the park also included assisting and advising the Park staff with native grasslands' seed selection and maintenance. Finally, I was very involved in matters pertaining to environmental education and communications. To accomplish this, I developed an interpretive program and trained volunteers to act as docents. Today, Buffalo Bayou Partnership has a dedicated Master Naturalist volunteer who leads very popular monthly tours that highlight the history of prairies and the ecological importance of the park's landscape. The volunteer also writes a monthly blog for Buffalo Bayou Partnership called A Naturalist's Perspective of Buffalo Bayou.

2. From the community's point of view, what were the major issues concerning this project? (300 words max)

From its inception, Buffalo Bayou Park faced several potential challenges, all of which have been dealt with effectively. The first challenge, of course, was the siting and design of a diversified suite of facilities situated in the floodplain. A second concern was programming the space to provide for a variety of experiences for the many people the park was set to serve. Lastly, a major challenge was to bring back a robust sweet of native ecologies that would help make the park more resilient and a better draw for both people and wildlife. In particular, Houston's clay soils present a problem with prairie and wildflower meadow plantings. In addition, every time the park experiences major flooding events, a host of invasive seeds flow down the bayou landing along the banks.

## COMMUNITY REPRESENTATIVE PERSPECTIVE (CONT'D)

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3. Has this project made the community a better place to live or work? If so, how? (500 words max)

The renovation has made Buffalo Bayou Park Houston's most beloved greenspace in the minds of many Houstonians and also has reconnected the city to the bayou that gave birth to our community. Its mixture of hike and bike trails, dining options, rich programming, children's friendly natural play area, and abundance of urban biodiversity make it a mecca for Houstonians to relax, exercise, and enjoy nature in Houston. All of these benefits stemmed from a truly enlightened design process which sought out the ideas of the community, experts, and others whose ideas are clearly reflected in the construction, maintenance, and acceptance of the park. Furthermore, the planning and execution of the Buffalo Bayou Park has had a spillover effect for other park planning processes, including the planning process of Memorial Park and Hermann Park – producing better results across the city. All of these efforts are helping Houston attract more creative talent and photos of Buffalo Bayou Park regularly appear in publications and online to market the City. In short, Buffalo Bayou Park has elevated Houston's reputation and expectation for greenspace and has provided everyone from skate boarding teenagers to bird watching octagenarians – a place of both excitement and peace.

4. Would you change anything about this project or the development process you went through? (500 words max)

The design process, transparency with partners, and the obviously successful results make it difficult to argue for a different planning or implementation process. The fact that Buffalo Bayou Park has experienced three 500-year floods in three consecutive years, shortly following its opening, and was able to get back on track so quickly is a testament to not only a successful design but also a testament to the organization and leadership of Buffalo Bayou Partnership to steward this project. I would not change anything about the process.

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# 2019

# RUDY BRUNER AWARD

## PUBLIC AGENCY PERSPECTIVE



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# PUBLIC AGENCY PERSPECTIVE

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This sheet is to be filled out by staff representative(s) of public agency(ies) who were directly involved in the financing, design review, or public approvals that affected this project.

Name	<b>Clifford Perry</b>	Title	<b>Senior Project Manager - Parks</b>	
Organization	<b>City of Houston - General Services Department</b>		Telephone	<b>832, 393-8081</b>
Address	<b>City Hall Annex, 900 Bagby, 2nd Flood</b>	City/State/ZIP	<b>Houston TX</b>	<b>77002</b>
E-mail	<b>Clifford.Perry@houstontx.gov</b>		Website	<b>www.houstontx.gov</b>

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Signature  On behalf of the Houston Parks and Recreation Department Date **12/12/18**

1. What role did your agency play in the development of this project? Describe any requirements made of this project by your agency (e.g., zoning, public participation, public benefits, impact statements).....

The City of Houston (COH) is the owner of the park land, bayou and cistern upon which the project is developed. When the COH Parks and Recreation Department (HPARD) was presented with the concept of a major park redevelopment, the department agreed and entered into a Tri-Party agreement with Buffalo Bayou Partnership (BBP) and Harris County Flood Control District. The COH also partnered with the Texas Department of Transportation (TxDOT) to install the 6-miles of 10' wide concrete hike and bike trail which is the primary artery for the movement through the entire park.

HPARD had many roles in the development of the park. We participated in the development of the scope (Design Workshop & Architectural Programs Meetings), reviewed and commented on plans and documents from conceptual design through construction and we provided our expertise and guidance on building and maintaining the site / amenities in this unique environment. Another primary role for the project was the coordination with other city departments and outside agencies to ensure schedules of each major project occurring in the bayou corridor was not in conflict with each other. These projects included the installation of two major COH storm detention / drainage outfalls into the bayou, installation of the Plensa "Tolerance" artwork by Houston Art Alliance and the completion of the TxDOT / COH Hike and Bike Trail. Our participation also included attending construction progress meetings, providing resolution to major conflicts / issues, and providing guidance to BBP on what agency to call when additional assistance was required.

2. How was this project intended to benefit your city? What trade-offs and compromises were required to implement the project? How did your agency participate in making them?.....

Before redevelopment, active use of the park was primarily limited to the south side of the bayou. While the three-mile-long park had other destination points within the corridor, the connections to each destination were limited.

The redevelopment of the entire corridor provided two major benefits to the city. The first benefit was creating major pedestrian transportation corridors between destination points along the bayou. Each corridor has trails on both the north and south banks of the bayou. The project installed bridges over the bayou with 1/2 mile to 3/4 mile increments. This major redevelopment is now becoming one of the most active parks in the HPARD system. The second major benefit was that the project opened new access points for Harris County Flood Control District to remove large amounts of silt / sedimentation deposits along the entire corridor. This accessibility has helped both downstream / downtown flooding events while creating new activity areas (beaches, canoe launches, etc.) within the corridor.

The redeveloped Buffalo Bayou Park exposed the bayou and "getting out in nature" to a larger segment of Houston.

The COH made many different types of trade-offs for the benefit to the park and our visitors. These included relocation and sharing of HPARD's Central Maintenance Facility for parks, the reuse of Houston Public Works large downtown cistern as an arts and performance venue and providing a dedicated annual maintenance funding stream to BBP through the Downtown Redevelopment Authority (TIRZ #3).

3. Describe the project's impact on your city. Please be as specific as possible.-----

The project revitalized the bayou park creating a greenspace experience unlike any other in Houston. The project has created multiple high activity and destination areas along the 3-mile corridor. The park has created a music festival venue on top of the cistern, a unique experience within the cistern, new nature playgrounds and play areas, gardens and meadows, restaurant, restrooms, trails, artworks, etc. However, one major impact now being realized is the redevelopment of the westside of Downtown Houston. The success of this development has led to other projects and planning efforts, such as the realignment and beautification of Allen Parkway and the Western Downtown Master Plan & Facilities Study. Additionally, plans have begun with TxDOT to re-route Interstate 45 to the east side of downtown. When this occurs, citizens, downtown users and festival goers will have an unimpeded east-west greenbelt corridor from downtown Houston to the far west end of Buffalo Bayou Park. Simply, the transformation of Buffalo Bayou Park is sparking an entire redevelopment of the westside of downtown Houston.

4. Did this project result in new models of public/private partnerships? Are there aspects of this project that would be instructive to agencies like yours in other cities?-----

A successful project of this scale and magnitude required City leadership, County leadership and the philanthropic community to work together through Buffalo Bayou Partnership. Long-term commitments were needed to ensure the Park's success. This project required on-going civic leadership, citizen participation and multiple governmental agencies continually pushing the project forward. A dedicated funding stream for maintenance, security patrol, programming, and volunteer efforts ensure the original vision is maintained.

5. What do you consider to be the most and least successful aspects of this project?-----

The most and least successful aspects of this project are tied to the same attribute - the bayou.

Buffalo Bayou Park's greatest attribute is the bayou. The bayou allows visitors to travel a three-mile corridor composed of both natural and manmade experiences. The bayou allows urban citizens the opportunity to interact with nature through the Waugh Bridge Bat colony, fish, native trees, meadows/prairies and beaches. The manmade experiences are composed of art installations, a skatepark, dog park, playgrounds and pedestrian bridges. The long bayou corridor provides a backdrop of rooms boasting a broad range of activities within a half-mile of downtown.

While the designers planned for much of the challenges of flooding along the bayou - the bayou has also been the most challenging aspect of the park. The bayou is a major tributary for floodwater from West Houston. As such, Buffalo Bayou flooding changes are unpredictable and quick. Hurricane Harvey left much of the park covered in an average of 18" of silt. Entire embankments slide into the bayou destroying some of the lower walking trails and planted native areas. The park was recovered, but redesign/rework was needed in some areas. The next major event will again challenge the park and additional work will need to occur again. This is all part of building a park along a wild and beautiful bayou corridor.

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# 2019

# RUDY BRUNER AWARD

## DEVELOPER PERSPECTIVE



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# DEVELOPER PERSPECTIVE

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This sheet is to be filled out by the person who took primary responsibility for project financing or is a representative of the group which did.

Name	Anne Olson	Title	President
Organization	Buffalo Bayou Partnership	Telephone	7137520314 ext 102
Address	1019 Commerce Street Suite 200	City/State/ZIP	Houston TX 77009
E-mail	aolson@buffalobayou.org	Website	www.buffalobayou.org

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Signature  Date December 12, 2018

1. What role did you or your company play in the development of this project? Describe the scope of involvement. Approximately 400 words.

As the lead sponsor of Buffalo Bayou Park's restoration, Buffalo Bayou Partnership (BBP) was involved in all aspects of the project. BBP initially met with representatives of the Kinder Foundation to work out the details of their \$30 million catalyst gift. The organization then worked with the foundation, City of Houston Parks and Recreation Department (HPARD), Harris County Flood Control District (HCFCD), and the Downtown Tax Increment Reinvestment Zone (TIRZ) on a long-term Construction, Operating and Maintenance Agreement. Under the project management of Guy Hagstette, BBP participated in all aspects of the project's design and construction. Along with the project manager, we selected the park's design team (SWA – landscape and Page – architecture), two artists who created the park's public art, and construction contractor. Although the Kinder Foundation gift did not require matching funds, BBP leveraged the grant and raised an additional \$23 million. Coordination of a robust community engagement and public relations program was still another responsibility of BBP. Our PR team and a private consultant coordinated community meetings, on-site tours, bike rides, etc. to get the word out about the project. Using the theme, In the Works, park signage and a monthly e-newsletter further informed the public about the project's construction. Once completed, BBP handled the planning and execution of the park's ribbon cutting and public opening. Today, BBP oversees the daily operation and maintenance of the park with 22 employees. The park team manages two visitor centers that house canoe/kayak and bike rentals, a café, and Cistern, a former underground City of Houston water reservoir, that is now used for tours and art installations. Oversight of events and programming also is a responsibility of BBP. A robust volunteer program is still another duty performed by the organization. During 2017, over 3,000 volunteers contributed approximately 10,000 hours of service.

2. What trade-offs or compromises were required during the development of the project? Approximately 400 words.

It might be more appropriate to say that the compromises needed to be made were due to the project's challenges.

1. Virtually the entire park is within a 100-year floodplain and much of it is in the Buffalo Bayou floodway. This meant careful attention had to be paid to durable designs and materials plus the resulting cost of maintaining the park to high-quality urban standards. Due to its challenging environment, the design palette had to be simple –for ex. galvanized rather than painted railings, heavy concrete custom-designed light poles rather than an off-the-shelf product.
2. The schedule for the 160-acre park project was very tight because the Kinder Foundation allowed only five years for completion from the start of master planning to final completion. (due to scope increases and flooding in 2015, the park was completed 6 months late), and we had to use multiple phases and construction contracts to meet the scheduling requirements.
3. The master agreement called for coordinated construction by seven different parties. BBP, the City Public Works Department, TxDOT, HCFCD, Downtown TIRZ, each of which had their own agendas, processes, budgets and scheduling imperatives, which led to there being four different construction contractors on the site at various times. However, visitors are amazed at the scope of improvements made possible by this approach.
4. During master planning, we learned the City did not own the entire park property, and we had to undertake negotiations with two adjacent cemeteries to acquire recreation easement rights. These acquisitions put pressure on the project's budget.
5. Due to a conservative approach to proceeding only when features were largely funded, two major park amenities were finalized after construction began – the park's café and the Cistern – and integrating these complex structures into the park's design and construction contract without exceeding the budget and delaying the schedule was difficult.



3. How was the project financed? What, if any, innovative means of financing were used? Approximately 400 words.

The \$58 million Buffalo Bayou Park was funded through a unique public-private partnership.

1. BBP's \$53 million investment in improvements to the city-owned parkland was 100 percent privately-funded, including a \$30 million catalyst Kinder Foundation grant that was restricted to "basic improvements." The Kinder Foundation required certain schedule milestones to be met and key commitments by partners. As stated in Question #1, BBP leveraged the Kinder Foundation's gift by raising an additional \$23 million.

2. HCFCD contributed \$5 million to fund channel improvement work and committed to long-term maintenance funding. The City used its capital budget, drainage fee and tax increment funds for its work, and TxDOT used a federal transportation grant matched with City dollars for the park's 5-mile-long hike and bike trail.

3. The Kinder Foundation required long-term funding be secured with BBP managing both park operations and maintenance. In order to prevent future cuts to the park's maintenance budget, the City agreed to have its Downtown Tax Increment Reinvestment Zone annex the park area and enter into a 30-year economic development agreement to provide \$2.1 million per year for operations and maintenance (increasing with inflation). The agreement gave the tax increment reinvestment zone an interest in the park for those 30 years, and under Texas law, tax increment reinvestment zones may pay for maintenance of facilities they "own." BBP agreed to use lease and concession revenue to build a Capital Expenditure fund and annually to place unspent funds into a Maintenance Reserve. These latter two funds were instrumental in providing the funds to clean up after Hurricane Harvey

4. What do you consider to be the most and least successful aspects of the project? Approximately 400 words.

Buffalo Bayou Park's success is attributable to many factors.

**Design:** The park's design had to respond to the hydraulic, ecological and human needs of America's fourth largest city. SWA had to pay careful attention to the fact that Buffalo Bayou is the principal drainage system for Houston. Managing storm water discharge, restoring the landscape, and offering a variety of amenities and experiences for visitors was not an easy task. The park offers something for everyone – recreational amenities such as bike trails, a volleyball court and children's play area; natural amenities such as wildflower meadows and prairies; and active sites for festivals, concerts and events. It is this integration that makes it so successful. It is truly gratifying to see that the park attracts a cross section of the Houston community.

**Public-Private Partnership:** The unique way in which the park's funding, operations and maintenance were structured has been key to its success. By having a long-term agreement, a requirement of the Kinder Foundation, it ensures that the park will be maintained and operated at the highest standard possible, not only today but for decades. This structure has been so effective that it is now being used for other Houston park projects.

Although the park was designed to flood, no one could have anticipated three major flooding events in two years, with Hurricane Harvey's rainfall being the greatest in US history. After experiencing these intense weather events and realizing this could be Houston's "new normal," BBP realizes we have to be adaptable, flexible and nimble. We have looked closely at how to make future park improvements more sustainable. Limiting the number of trails at the channel's edge and designing our light fixtures to be more water resistant are just two adjustments that we are considering. We also are planning to conduct a Buffalo Bayou channel stability study and rehabilitation assessment to inform our projects in the future.

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2019

# RUDY BRUNER AWARD

PROFESSIONAL CONSULTANT  
PERSPECTIVE



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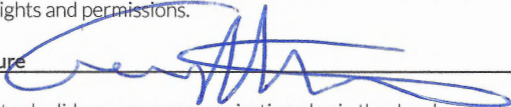
# PROFESSIONAL CONSULTANT PERSPECTIVE

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This sheet is to be filled out by a professional who worked as a consultant on the project, providing design, planning, legal, or other services. Copies may be given to other professionals if desired.

Name **Guy Hagstette** Title **Vice-President of Parks & Civic Projects**  
Organization **Kinder Foundation** Telephone **(713) 529-5537**  
Address **2229 San Felipe Street, Suite 1700** City/State/ZIP **Houston TX 77019**  
E-mail **ghagstette@kinderfoundation.org** Website **Kinderfoundation.org**

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Signature  Date **12/07/2018**

1. What role did you or your organization play in the development of this project? Approximately 400 words.

Under contract with BBP and the Kinder Foundation, I oversaw the development process, including project management; budget management; contract negotiations with design and all other consultants; master agreements with the City of Houston and Harris County Flood Control District (HCFCD); negotiations with lessees and adjacent land owners; and permitting at all levels. I began as an intermediary between the Kinder Foundation and BBP as the catalyst \$30 million grant was being finalized, oversaw the master plan, design, and construction phases (there was no separate construction manager), and continued through project close-out in 2016. I also oversaw the preparation of a detailed operating and maintenance plan for the park that formed the basis for the annual maintenance budget, and I served as intermediary among the key partners and reported to the project's Steering Committee charged with coordinating among the project's partners. I worked closely with Anne Olson and the BBP board, and I have remained involved since completion as BBP has worked to recover from a series of major floods and Hurricane Harvey. I was an independent consultant with no employees or staff. I now work for the Kinder Foundation as Vice-President of Parks and Civic Projects, and I am on the BBP Board of Directors.

Previously, I was President of the Discovery Green Conservancy and oversaw development and the initial two years of operations of the 12-acre park in downtown Houston from 2005 – 2010. Prior to this, I worked as an urban designer with the downtown business improvement district on revitalization efforts in downtown Houston. My career began by winning a design competition and leading the design for Sesquicentennial Park immediately downstream of Buffalo Bayou Park. My previous professional experiences guided and informed my work on Buffalo Bayou Park.

2. Describe the project's impact on its community. Please be as specific as possible. Approximately 400 words.

Buffalo Bayou Park's impact on Houston is broad and deep. It converted 160 acres of under-utilized drainage easement into a high-quality urban park in an area that is rapidly urbanizing. Its unique location also is very accessible to a diverse range of inner city neighborhoods, which ensures that the park serves many Houstonians and not just a few. It also gives downtown Houston a green space and recreational amenity to better compete with new town centers in suburban areas.

The park also ignited interest in a century-old idea of a park system along Houston's bayous. Proposed and funded in 1912, the idea was discarded after two massive floods in 1929 and 1935 when our bayous were relegated to drainage ditches (these 160 acres were acquired for park purposes at that time but were converted to a drainage easement after those floods). Perception of Buffalo Bayou was even worse, with most people viewing it as an open sewer that was best ignored. As the park was beginning to capture the public's imagination in 2012, Houstonians approved \$100 million in park bonds to dust off the old park plan and fund trails and greenways along all of Houston's bayous, and this public-private initiative is opening up thousands of acres of green space and scores of miles of trails throughout the city.

The park even changed our perception of the city itself. It made an impact at a city scale, and we now can visualize Houston as a beautiful place, something many did not think was possible. This has impacts beyond aesthetics. The park's focus on natural systems is a living classroom for city dwellers to learn about nature's profound beauty and power even in the heart of the nation's fourth largest city. These lessons range from the park's recovery after Hurricane Harvey to its Lunar Cycle Lighting, which visually ties the moon's phases to the bayou's tidal fluctuations. Our city, country and world will require this deeper understanding of our natural world if we are going to tackle climate change successfully.

## PROFESSIONAL CONSULTANT PERSPECTIVE (CONT'D)

3. How might this project be instructive to others in your profession? Approximately 400 words.

Major civic projects like Buffalo Bayou Park often are the victim of elaborate processes, long schedules, corresponding high costs and a resulting loss of support. BBP is a lean but effective organization, and its approach to this project (with strong support from the Kinder Foundation) saved time and money while delivering results that Houstonians love. Because BBP has focused on community engagement throughout its existence and already had a broad vision for Buffalo Bayou, community engagement and master planning for this 160-acre, 2.5 mile-long park was completed in a bit over 6 months. Implementation of design and construction without delay was a requirement of the Kinder Foundation grant, which forced the public entities to focus their resources and get things done. In fact, the Kinder Foundation's willingness to engage not just with an up-front catalyst grant but also with time and energy from start to finish was a critical factor in Buffalo Bayou Park's success. The process never slowed down, and as a result, momentum grew from skepticism to excitement.

This streamlined approach extended to the project's overall organization. Rather than creating a new entity for the project with the various partners formally under one umbrella organization, a Steering Committee was formed that oversaw their coordination and helped keep each on the project's ambitious implementation schedule. While coordinating with one another, each was able to use the procedures that had evolved to fit their organizations' needs. This approach had a measurable and beneficial impact on the schedule, but it did require constant project management attention in order to work through endless details as coordination proceeded from high-level issues to "on-the-ground" realities.

The streamlined approach extended to the professional contracts. Construction contracts focused on landscape architecture that exceed \$40 million are rare, and BBP (with SWA Group and me) took the time to investigate the most effective way to contract for this work. The result was an invited traditional bid because landscape contractors in this part of the world are still used to this competitive approach (unlike architectural contractors). Furthermore, BBP opted to not bring in a cost estimator or construction manager and relied on its lone project manager teamed with traditional design and construction administration services by SWA Group. These decisions saved BBP millions of dollars in consulting fees that could be invested in the park itself.

4. What do you consider to be the most and least successful aspects of this project? Approximately 400 words.

The park's success is due to its design and funding/operations strategies, but its extreme environment is a challenge.

Its physical design is underpinned by fluvial geomorphology (the science of natural stream behavior). It restores native ecologies lost over the previous century as the bayou was channelized and its watershed developed. The vast majority of the park's acreage serves as a natural respite from the rapidly urbanizing central city around it with a mix of prairies, woodlands, wetlands, rambles, open lawns, native gardens and even a bat colony. At key points, the park meets the city and offers a mix of recreational amenities that draw more people in. They include a major civic event space where the Fourth of July is celebrated, a festival venue, dog park, canoe launch, bicycle rentals, restaurant and the Cistern. This variety of activities enriches the park experience and gives a big, diverse slice of Houstonians many reasons to visit the park time and time again.

The park also will be a success over time because its ongoing operations and maintenance were built into the original plan. Strong, long-term master agreements in place to 2096 backed up by a formally adopted master plan, clearly delineated responsibilities for the partners in an Owner's Manual, and enforcement provisions help ensure no backtracking by the partners. The Kinder Foundation's role as a third-party beneficiary in the master agreement means it can use its considerable resources to enforce the agreements.

The park's plan and operations/maintenance strategy began with an understanding of the bayou itself and anticipated periodic floods. As a result, the park bounced back quickly from several severe floods in 2015 and 2016; however, no one anticipated Harvey's devastation, which caused not only record-setting flood water levels but also a long period of high water because of releases from upstream dams under stress from the hurricane. The park itself survived the storm remarkably intact with the exception of massive amounts of silt that had to be removed. However, HCFCD's commitment to natural systems along the channel resulted in some bank failures and erosion during this extreme storm. A half dozen water's-edge locations are still waiting for repair as HCFCD waits for federal funds to help pay for them. Finally, the large dog park required redesign as it turned out to be located where the bayou's flood waters tend to deposit huge amounts of silt that proved too difficult for BBP to quickly remove after each flood.

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# 2019

# RUDY BRUNER AWARD

ARCHITECT OR DESIGNER  
PERSPECTIVE



**RUDY  
BRUNER  
AWARD**  
FOR URBAN EXCELLENCE

# ARCHITECT OR DESIGNER PERSPECTIVE

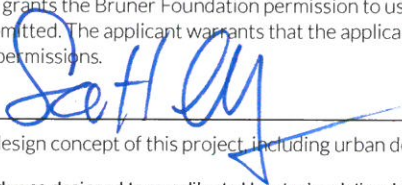
Please answer questions in space provided. If possible, answers to all questions should be typed or written directly on the forms. If the forms are not used and answers are typed on a separate page, each answer must be preceded by the question to which it responds, and the length of each answer should be limited to the area provided on the original form.

This sheet is to be filled out by a design professional who worked as a consultant on the project, providing design, planning, or other services. Copies may be given to other design professionals if desired.

Name	Scott McCready	Title	Principal
Organization	SWA Group	Telephone	713) 868-1676
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Signature



Date 12/12/2018

1. Describe the design concept of this project, including urban design considerations, choice of materials, scale, etc. Approximately 400 words.

Buffalo Bayou Park was designed to re-calibrate Houston's relationship with its network of urban waterways. Long seen as purely drainage channels utilized for mitigating the city's expansive floodplains, the project reconsiders the role of the bayou in the context of densely populated communities and urban districts which interface the open space corridor. The park introduces community-focused, flexible, programmed park facilities as an overlay to this ecologically rich, riparian corridor. In doing so, Buffalo Bayou Park establishes a new typology of high-value urban open space at the core of the city.

Flanked by high speed urban thoroughfares to its north and south, the design seeks first and foremost to address significant access challenges to the park. In addition to offering vehicular parking and drop-off locations, multi-modal connectivity was emphasized through the introduction of bike-share facilities, as well as a network of pedestrian bridges, enhanced at-grade crossings and underpass trail connections to adjacent neighborhoods. Linear trail networks are designed to serve a variety of users, with accommodation to the varied needs of its users. Boating facilities, water-based tours and numerous water crossings allow users to become immersed in this unique environment, elevating people's understanding of the complexities, significance and beauty of Houston's overlooked ecology.

Buffalo Bayou presents a challenging environment within which to develop a civic park. Steep erosive banks, over 30' tall in some locations, create challenges to access, visibility and stability. Frequent flood waters bring debris, silt deposition, erosion and complete inundation of the park. To mitigate these conditions, the project relied on a series of resilient design techniques aimed at ensuring the long-term viability of park enhancements while accommodating the conveyance of storm waters through the park. Many of the banks of the bayou were re-shaped for stabilization, while channel geometry was optimized to control silt deposition to designated flood-bench locations. Riparian vegetation, including over 14,000 new trees were planted to ensure stability and enhance conditions for habitat. High-value site features and programming were located at higher elevations to limit their exposure to flood conditions. Materials for the site were selected for both their durability and context to adjacent highway infrastructure. Primary materials for the project include formed concrete, galvanized and Corten steel, and recycled concrete rip-rap. Detailing of light fixtures, guardrails and wall locations were designed both to withstand this abusive environment as well as establish a strong vernacular for the overall bayou park system.

While accommodating programs for people, the park design also sought to establish a balance with the ecological functions of the site. The design preserved undisturbed wild zones while integrating ecologically enhanced landscape to the larger park structure. Planting design focused on increasing the urban forest canopy of the site while reducing lawn areas through establishment of native wildflower meadows. Wetland edge conditions were preserved and high-functioning natural areas were preserved.

2. Describe the most important social and programmatic functions of the design. Approximately 400 words.

Buffalo Bayou Park incorporates a wide variety of programmatic spaces with the goal of creating a civic destination that serves the needs of a broad cross-section of user demographics.

The park's extensive trail network, with designated multi-use and pedestrian only zones, brings badly needed infrastructure for public health and well-being to the heart of the city. Extensive lighting of trails and key open spaces extends the use of the park into evening hours. Numerous bridge crossings allow for shorter trail loop segments. These bridges also serve to give park users iconic views to the city skyline in context with its natural surroundings, bringing meaning to the city's nickname, 'The Bayou City'.

The design of the park worked with the undulating topography of the site to create a series of 'rooms' which vary in scale and character throughout the site. The park presents a transect from urban-to-wild in character as one moves from east to west, with more highly programmed portions of the park located closer to downtown and natural areas extending further west. These spaces offer flexible and scalable places for a variety of both passive and active uses. Likewise, the site's topography offers a unique environment in Houston's flat landscape for exercise or social gatherings. Plantings of redbud, bald cypress, sycamore and wildflowers emphasize both the sites unique riverine context, as well as offering seasonal displays not seen elsewhere in the city.

Among other amenities, the park features a series of upland gardens, a nature play-scape for children, the Joe Jamil Skatepark, an expansive dog park and multiple flexible-use plazas and pavilions. To the west, the Lost Lake garden and restaurant location offers an upland water garden with indoor dining, kayak rentals and park offices, offering park goers a point of refuge during Houston's hot summer months. Art programming for the park is present through a variety of media and programming. Highlighting the art program is the park's Cistern; an 87,500-square-foot historic city water collection facility transformed into an iconic multi-media art facility. Visitors are provided access into this iconic space through guided tours of rotating art exhibits, programmed in conjunction with local and national art institutions. On top of the Cistern resides a performance lawn and stage with commanding views to the downtown skyline. Additionally, iconic and site-specific art pieces carry throughout the park. Blue LED lighting along trail lights and under bridge crossings are timed with lunar cycle to connect park users to the longer time scales of nature. Trail entry points are marked with canoe portals and poetry to remind visitors of the unique character of the bayou landscape. One of the primary goals for the park was to reestablish the ritualized connection Houstonians have with their bayou. Large, flexible use event lawns provide the infrastructure for major civic events and celebrations, such as the Fourth of July, the Art Car Parade and numerous music festivals.

## ARCHITECT OR DESIGNER PERSPECTIVE (CONT'D)

3. Describe the major challenges of designing this project and any design trade-offs or compromises required to complete the project. Approximately 400 words.

The park's unique location, deep in a floodplain and subject to frequent storm water events, presented a series of challenges both for design and construction of the site. Given Houston's long history of urban flooding, protecting adjacent neighborhoods is critical to all projects within the city. The park project's key criteria for design was to ensure that there were no adverse impacts to the floodplain. This required significant effort with regards to hydraulic modeling and design adjustments to grading, building elevations, wall locations and site programming. Likewise, sensitive site infrastructure, such as lighting and electrical facilities, required custom design approaches to ensure resilience to full immersion and/or finding limited locations above the base flood elevation.

Many details of the park utilize special details to ensure their ability to withstand the hard environmental conditions of the park. Steep slopes required extensive trail retaining walls to accommodate side slopes for ADA access. Trails and walls feature extra-deep footings and foundations to cope with unstable soils. Storm water silt deposition was addressed through creation of flood benches, creating access paths for large machinery, alignment of walls to resist silt capture and placement of stand pipes to provide post-storm trail 'wash-off' stations. Pedestrian bridges made use of Houston's extensive oil industry fabrication facilities to build long-span segments that otherwise could not have been built by traditional pre-fabrication companies. The added cost built into these features required careful prioritization of the overall budget to ensure programming goals were met without compromising the long term integrity of the park.

Establishing a balance between the long-term resilience of the park and preservation of site features also required careful consideration relative to preservation of existing landscape features. In order to re-align key segments of the bayou for bank stability, existing trees were removed and replaced with native reforestation. In other areas, large stands of critical, healthy lowland forested zones or iconic specimen trees restricted design interventions that would otherwise have benefited the larger park goals. These considerations extended into the timing of construction to ensure that sensitive sites were limited in their exposure to potential storm events.

4. Describe the ways in which the design relates to its urban context. Approximately 400 words.

Buffalo Bayou Park's location touches upon numerous adjacent neighborhoods and urban conditions. The parks' relative physical isolation, caused by the presence of two major urban thoroughfares to its north and south, required careful planning to ensure access could be accommodated by pedestrians, cyclists and by car. The strategic siting of pedestrian bridges provide extensions over Memorial Drive (to the North) giving adjacent neighborhoods direct access into the park.

Gateway points are emphasized through art, landscaping and earthwork. Re-grading of slopes at key view corridors provide long views down the bayou at key entry locations. Gateways to trails incorporate site specific art. Iconic tree plantings focusing on native, riparian tree species rarely seen in typical urban context provide 'soft' gateway markers into the site and celebrate the parks unique ecological context within the city. Likewise, framed views from within the site at key bridge crossings and sheltered overlooks provide iconic images of the city skyline, historic cemeteries and tree-top views across city neighborhoods.

Materials utilized in the park are informed by not only practical considerations for maintenance and cost, but also their relationship to Houston's strong infrastructure vernacular. Raw concrete, metal and recycled materials, scaled up to account for the harsh conditions of the site, recall the industrial heritage of Buffalo Bayou and dominant presence of Houston's transportation infrastructure.

The park operates along a transect that moves from urban conditions and activities closer to downtown, to the more wild conditions of Buffalo Bayou on the west end of the project. Likewise, the vertical section of the site reflects this urban to wild transition as one moves from the street level to lower trail segments closer to the water. Most critically, however, the project represents an example for the city of how Houston can make better use of its extensive bayou network to provide sustained ecological vitality, engaging places for people and resilient landscapes in the face of continued urban growth and changing environmental conditions.

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# 2019 RUDY BRUNER AWARD

OTHER PERSPECTIVE



**RUDY  
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# OTHER PERSPECTIVE

Please answer questions in space provided. If possible, answers to all questions should be typed or written directly on the forms. If the forms are not used and answers are typed on a separate page, each answer must be preceded by the question to which it responds, and the length of each answer should be limited to the area provided on the original form.

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E-mail	stephenkornis@gmail.com	Website	-- --

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Signature Stephen Kornis Date Dec 5, 2018

1. What role did you play in the development of this project?.....

As an artist, public art consultant and designer, my role in the development of the Buffalo Bayou Park was to help guide the implementation of the blue-white-blue lunar-cycle lighting scheme and provide input concerning sites and programming for public art.

The new park's lighting grew out of the comprehensive Buffalo Bayou Lighting and Public Art Masterplan I created with L'Observatoire International, commissioned by the Buffalo Bayou Partnership in 2001, and a precedent bayou park/trails project, Sabine Promenade (2003-06). Based on the BBP's vision of Houston, our approach addressed the experience of the bayou at a distance, nearby, and within, while recognizing three orders of lighting throughout: trail lighting, peripheral or environmental lighting for safety and site definition, and special artistic and site-specific lighting treatments to draw attention to features of the living, tidal bayou.

The Buffalo Bayou lunar-cycle lighting program evokes the natural order of the bayou with beacons on its trail fixtures that change from white to blue to white, trail section to trail section, in sync with the monthly phases of the moon.

To emphasize the ways in which the Buffalo Bayou is a dynamic natural feature in an otherwise highly urban setting, it was important to include elements of change in its night-time identity, analogous to its changes during the day with the passage of the sun. Dramatic blue flood-lighting beneath selected bridges provides further evidence of change as it appears and reappears when adjacent trail sections become blue in each lunar cycle.

2. Describe the impact that this project has had on the your community. Please be as specific as possible. ....

Buffalo Bayou Park is becoming widely recognized as Houston's core landscape and nature destination. It's walking and biking trails traverse the city's downtown and are extending beyond its surrounding neighborhoods both physically and psychologically, improving the city's image as a place with unique natural beauty and recreational opportunities.

As Houston's expanding light-rail system brings focus, coherence, and improved communal accessibility to the city's downtown, the reclaimed Buffalo Bayou affords large-scale venues for musical and civic celebrations, meeting places for families and smaller groups, and a shared sense of ownership and pride among the city's diverse and widely dispersed populations.

The aesthetic and programmatic excellence of the park's design and it's successful integration into the fabric of the human city is the result of decades of thoughtful projects and collaboration among the local principals, and a shared commitment to both preserve and reveal the architectural, cultural, and natural abundance of this urban and natural coastal river. The Buffalo Bayou Park provides dramatic evidence and impetus for the transformation of Houston from a city of office towers, oil refineries and air-conditioned suburbs, into a highly livable city where a good quality of life is a shared priority. The planned extension of the park into Houston's East Sector recognizes the diminished industrial use of this area and the opportunity to promote a more comprehensive and inclusive residential city with geographic and historical roots in the bayou domain.

3. What trade-offs and compromises were required during the development of the project? Did you participate in making them?.....

I participated primarily in the project's concept design phase and was not extensively involved in design development and the inevitable compromises that are encountered in a project of this scope.

In the precedent Sabine Promenade project, I recommended that budget allocations for public art be transferred to the lighting program to enable the lunar-cycle and second-order lighting to be fully funded. My view was that worthwhile public art treatments required substantial budgets of their own, and could be funded independently in the future. Lunar-cycle lighting became a signature public-art element for the bayou that was integral to the Buffalo Bayou Park design, and is being included in the East Sector bayou parks that are envisioned by the BBP.

4. What do you consider to be the the most and least successful aspects of this project?.....

The Buffalo Bayou Park is an unusually well integrated urban park that serves a growing population of neighbors, weekend families, and visitors to the city who seek an encounter with the native Texas coastal landscape, contrasted with Houston's dramatic skyline, bridges, and urban topology. It is extremely popular and has given downtown Houston a profound geographic and social identity that is not offered by the pine woods, artificial lakes, lawns, and golf courses found elsewhere in the city.

The park provides easy access to the living, natural bayou driven by tides and wind, while yielding unexpected encounters with myriad bridges, industrial structures, and engineered spaces. Where else can you chance upon a wild alligator swimming within 500 meters of a 60 story office tower?

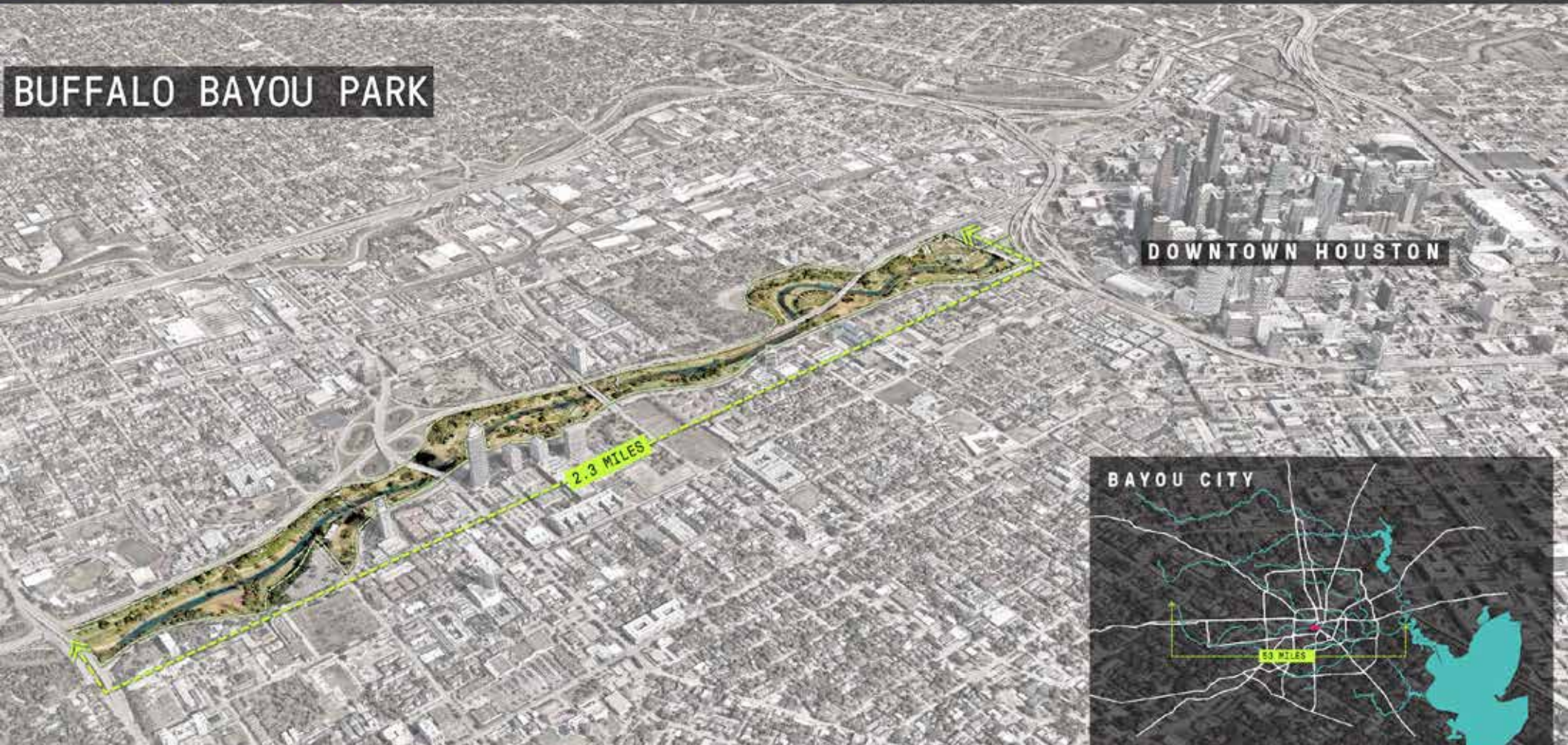
The park's diverse landscape contains walking and bike paths, pedestrian bridges, comfort stations, restaurants and artworks in surprising configurations and placements, and offers a large range of experiences in close proximity. While Houston still regards itself as a car-based society, intense park usage signals an increasing pedestrian and pedal-powered urban outlook.

On the negative side, although flooding and post-flooding maintenance was carefully anticipated in the Park design and programming, multiple 500-year events in short succession have been very costly. The water resistant Buffalo Bayou trail fixture has proved difficult to maintain after prolonged submersion, and is being retrofitted.



- 1 SHEPHERD DRIVE GATEWAYS AND PEDESTRIAN AND BIKE BRIDGE
- 2 ST. THOMAS MEADOW
- 3 TIRRELL MEADOW
- 4 CEMETERY OVERLOOK
- 5 TIRRELL CASCADE
- 6 RESTAURANT, INFORMATION, AND KAYAK RENTAL
- 7 LOST LAKE
- 8 JACKSON HILL PEDESTRIAN AND BIKE BRIDGE
- 9 LIVE OAK SEATING CIRCLE
- 10 WAUGH DRIVE BRIDGE
- 11 GREENTREE NATURAL AREA
- 12 WORTHAM FOUNTAIN PLAZA
- 13 MEMORIAL HEIGHTS OVERLOOK
- 14 DOG PARK
- 15 ROSEMONT PEDESTRIAN AND BIKE BRIDGE
- 16 STANFORD LIVE OAK GROVE
- 17 LOWER TAFT STREET FOOTPATH
- 18 MEMORIAL DRIVE VIADUCT UNDERPASS
- 19 POLICE MEMORIAL PEDESTRIAN AND BIKE BRIDGE
- 20 COTTONWOOD BOWL EVENT LAWN & AMPHITHEATER
- 21 TAPLEY TRIBUTARY
- 22 DOWNTOWN SKYLINE OVERLOOK
- 23 ELEANOR TINSLEY PARK EVENT LAWN AND AMPHITHEATER
- 24 ALLEN PARKWAY LIVE OAK PROMENADE
- 25 PARK MAINTENANCE YARD
- 26 SABINE SPRINGS FILTRATION WETLAND SOURCE
- 27 THE WATER WORKS: SKY LAWN WITH PERFORMANCE STAGE ON TOP OF RENOVATED HISTORIC CISTERN FOR ART INSTALLATIONS
- 28 NATURE PLAYGROUND AND PICNIC PAVILION
- 29 DOWNTOWN SKYLINE PAVILION, INFORMATION, & BIKE RENTAL BUILDING
- 30 CROSBY OUTFALL AND OVERLOOK

# BUFFALO BAYOU PARK



**DOWNTOWN HOUSTON**



Buffalo Bayou Park provides over 160 acres of linear open space along Buffalo Bayou. The park reclaims the potential of Houston’s bayous as accessible greenspace and connective tissue while retaining their infrastructural use of flood mitigation, and sets the standard for Houston in the 21st century to live up to its name of the “Bayou City”.



# RECLAIMING URBAN OPEN SPACE

The park demonstrates how creative design techniques can unlock valuable open space within an important urban floodway in the heart of America's fourth largest city.



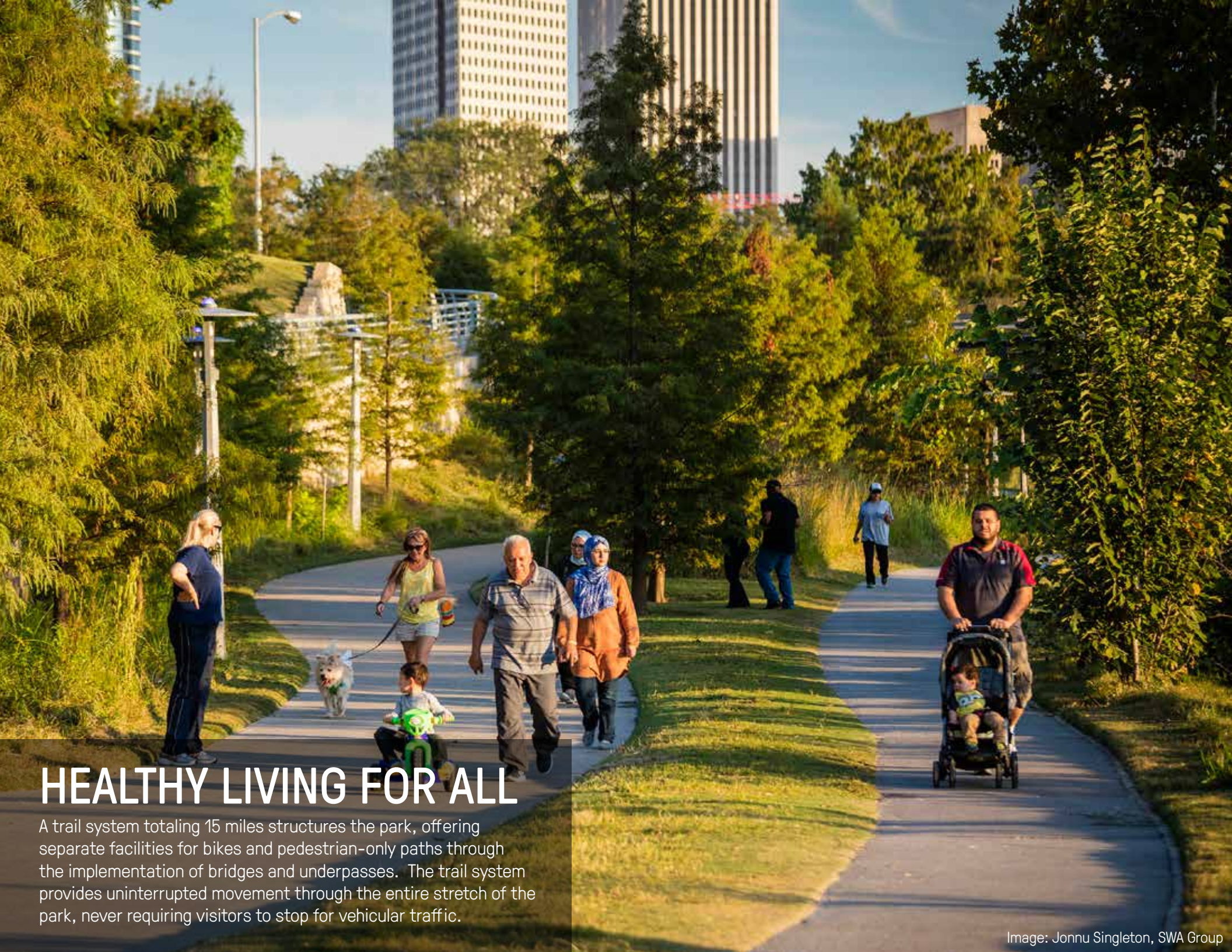
## DESIGNED TO FLOOD

Built in a floodway, water will rise up to twenty feet several times a year during Houston's sporadic torrential rainfalls, completely inundating and submerging most of the park.



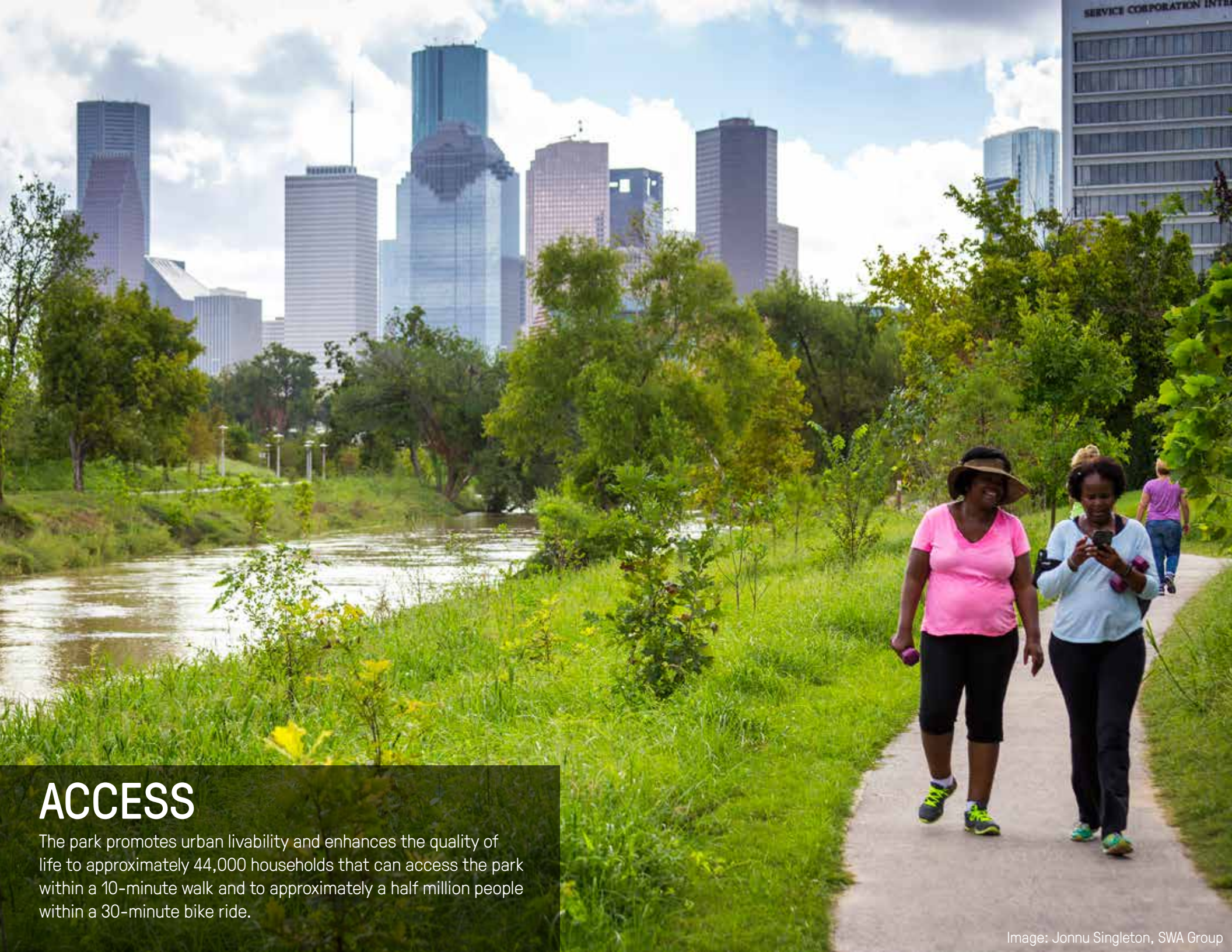
# TRANSFORMATION

Buffalo Bayou Park transforms an under-maintained water corridor into one of the country's leading parks and acts as a national case study for the restoration of urban rivers around the United States.



# HEALTHY LIVING FOR ALL

A trail system totaling 15 miles structures the park, offering separate facilities for bikes and pedestrian-only paths through the implementation of bridges and underpasses. The trail system provides uninterrupted movement through the entire stretch of the park, never requiring visitors to stop for vehicular traffic.



## ACCESS

The park promotes urban livability and enhances the quality of life to approximately 44,000 households that can access the park within a 10-minute walk and to approximately a half million people within a 30-minute bike ride.





# CONNECTIONS

New bike and pedestrian bridges provide more frequent crossing opportunities, and separate these modes from vehicular bridges, where sidewalks were undersized and unsafe. The formal vocabulary of these bridges is inspired by Houston's infrastructural landscapes, and their physical structures of the bridges are designed to go underwater and withstand impacts from debris floating down the bayou, such as trees and automobiles. All bridges and paths within the park are accessible and provide complementary ramp connections with all stairs.



## NATURALIZED LANDSCAPE

One of the most significant improvements is the transformation of the landscape to a more natural and self-sustaining state by reintroducing native landscapes and restoring diversity and balance to the terrain. Over 14,000 native trees were planted in the park.



## PUBLIC ART

The park is amassing a collection of artworks. The project integrated existing artworks through enhancing their surrounding landscape while simultaneously creating opportunities for new ones to be added during construction and in the future. Anthony Thompson Schumate's "Explore" is pictured in his Monumental Moments series found throughout the park.



## NATURE PLAY

The park is designed to facilitate many different types of engagement with nature through cycling, jogging, paddling, and exploration. A nature playground provides intimate contact with natural play features for children. Highlights of the play area include a boulder rock scramble, a rolling lawn, a stream and waterfall, climbing logs and stones, and 33-foot slide.

# RESILIENT DESIGN TECHNIQUES



## FLUVIAL GEOMORPHOLOGY

The recalibration of the bayou corridor's plan and section geometries through the application of fluvial geomorphology principles creates a legible pattern of landform along the bayou segment. Outside bends of the channel receive greater erosive forces and are planted with riparian tree species to stabilize the earth. Inside bends serve as silt collection benches during high water events. Lawns and gardens are then located strategically relative to the new plan and section geometries based on projected frequencies of highwater flood events.

# RESILIENT DESIGN TECHNIQUES



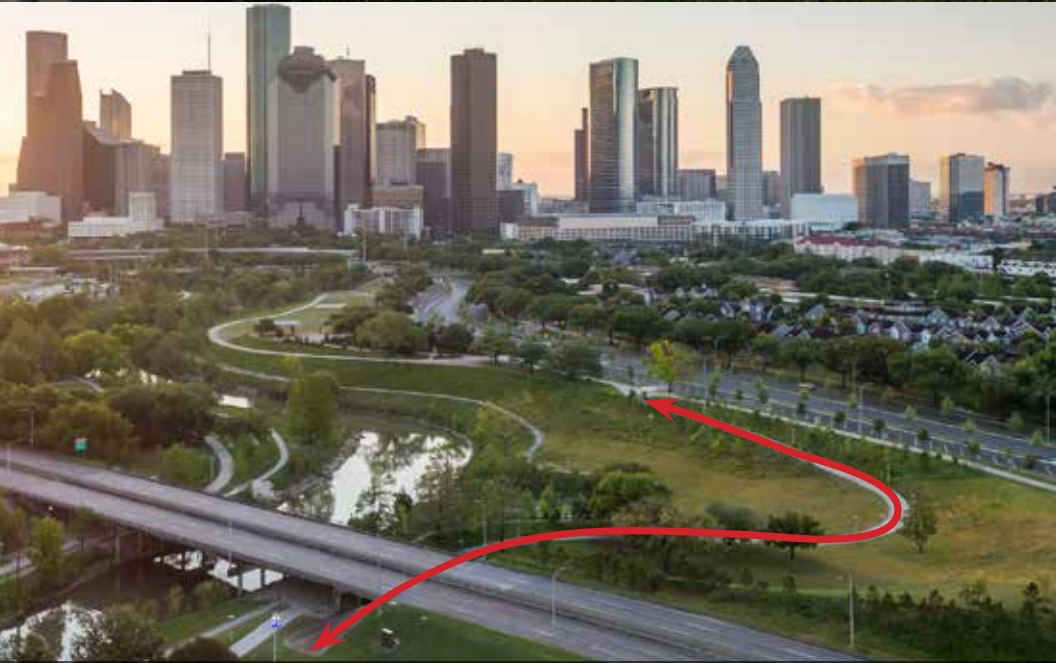
## Impact Resistant Design

Galvanized steel stairs and handrails were “upsized” from standard requirements and robustly engineered to withstand submersion and floating debris impacts.



## Retaining Wall Placement

The retaining wall placement throughout the park is designed with a lower edge on the bayou side to minimize silt entrapment after a large storm event.



## Maintenance Routes Embedded in Design

Maintenance routes have been integrated into the plan for heavy equipment to be able to access specially designed silt benches for silt removal several times a year.



## Silt Benches for Maintenance Accessibility

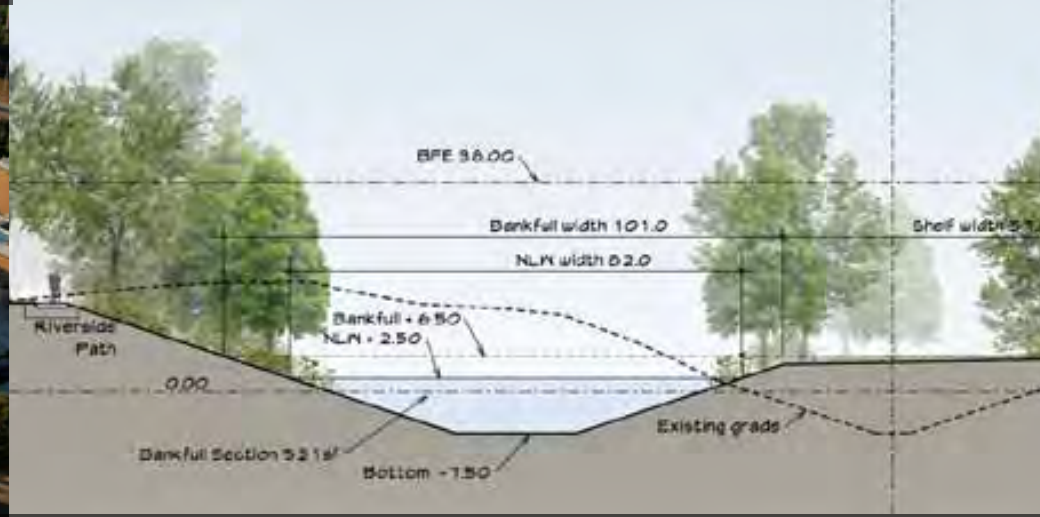
Located on the inner bends of the bayou, the designed silt benches are positioned where water flows more slowly and naturally deposits the high silt loads. These planned silt benches help maintenance crews direct cleanup efficiently.

# RESILIENT DESIGN TECHNIQUES



## Architectural Placement

Only two habitable buildings were placed on the site. The locations are the only two points of high ground within the park conducive to siting buildings above the Base Flood Elevation.



## Laying Back Slopes

As part of the park updates, the slopes of the bayou banks were laid back to create additional cross sectional capacity for flood conveyance.



## Channel Realignment

Principles of fluvial geomorphology were used to inform the channel restoration, reintroducing meanders in the bayou. The channel restoration alleviates erosion issues by implementing optimized plan and section geometries.



## Vegetation

Over 14,000 native trees were planted in the park over the course of construction. The planting was carefully curated and includes bald cypress trees—planted adjacent to the bayou—to stabilize the banks with their extensive root systems.



# POST-HARVEY RECOVERY

An extended period of high water covered the park, largely from upstream dams under stress from the hurricane. While over 80 million pounds of silt was deposited, the majority of the park survived remarkably intact. Resilient design strategies and a comprehensive Operations & Maintenance plan helped the park bounce back in the face of the devastating storm.





Harvey High Water



One Year Post-Harvey



Harvey High Water



One Year Post-Harvey



Sediment Deposited by Harvey



One Year Post-Harvey



Sediment Deposited by Harvey



One Year Post-Harvey



# FLEXIBILITY

The Park provides open space and lawns specifically designed without programs to enable Houstonians to use the park in a flexible manner, perhaps changing their experience of a specific space with each visit.



## ART PORTALS

Public art within the park, like John Runnels' work, titled "It Wasn't a Dream, It was a Flood", create welcome portals into the park and serve as visual reminders of the bayou to passing travelers above the water's banks.



## THE CISTERN

Built in 1926, 'The Cistern' was one of the City's oldest drinking water storage facilities. Originally slated for demolition, the design team worked to develop a preservation strategy for the structure. Now the refurbished structure has new life as a unique installation art venue that celebrates the City's history. Pictured on the right: "Rain" by Magdalena Fernández, at the Houston Cistern.





# CELEBRATION

The Police Memorial Bridge pylons frame the iconic Houston downtown skyline while citizens parade through the park as part of an art processional during the park's grand opening festivities.

An aerial photograph of a park featuring a winding river, a network of pedestrian paths, and a baseball field. The paths are designed to be sinuous and separate pedestrian footpaths from bike paths. The river flows through the center, bordered by lush green trees and grass. A baseball field with a blue-roofed structure is visible on the right side.

# LINEAR TRAILS

Pedestrian footpaths are separated from bike paths within the park. The slower speed of travel they encourage, along with the more sinuous alignments, create visual interest through choreographed, ever-changing views as one moves along them.



## RESTORED PRAIRIE

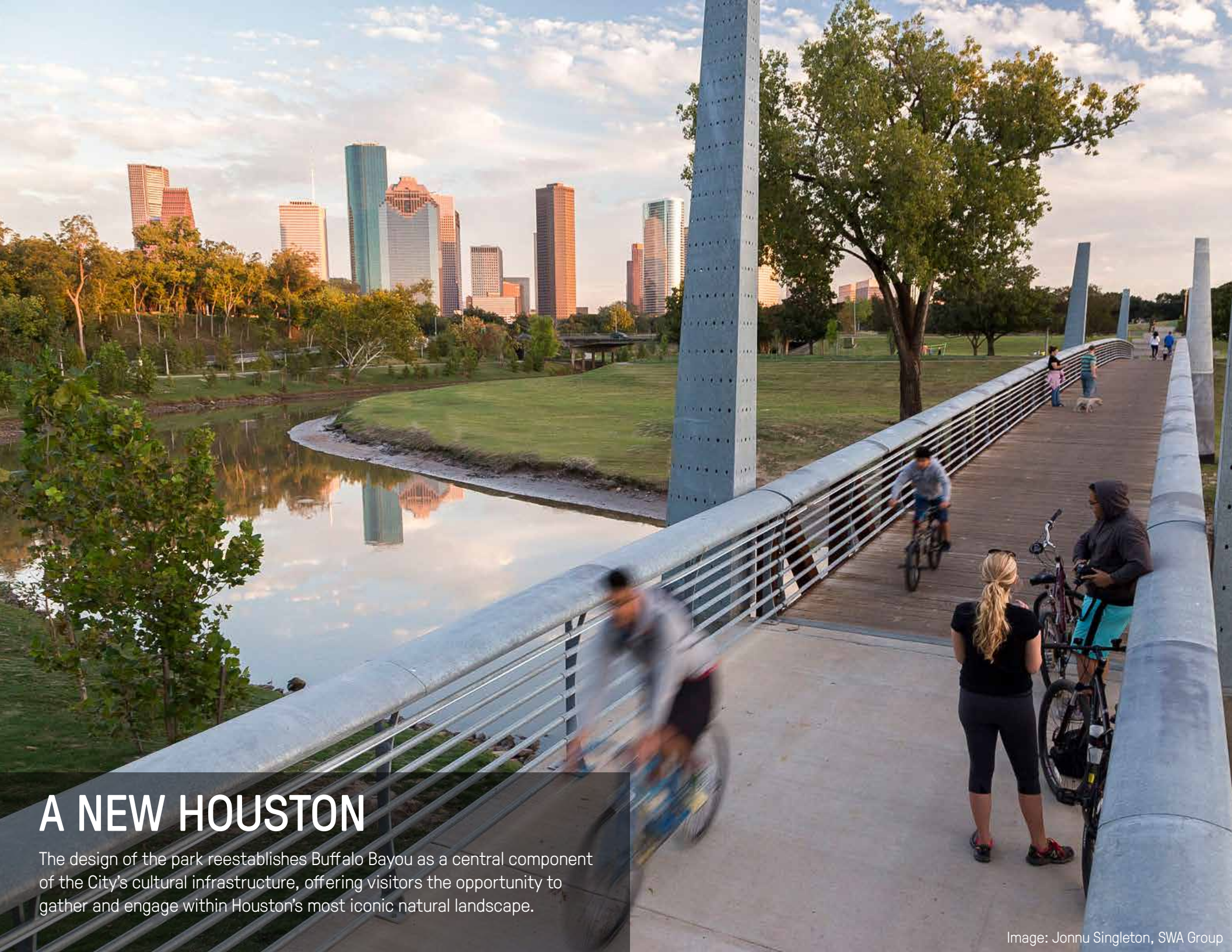
Fifty percent of the park's lawns were replaced with meadow to improve habitat, add beauty, and minimize maintenance costs. In collaboration with Katy Prairie Conservancy, eleven acres within the park have been seeded to create "pocket prairies" that showcase wildflowers and grasses throughout the year.





# ARCHITECTURE

The interior of the cafe at Lost Lake rests just above the 100-year flood elevation (18 inches below the floor beam). Two locations within the park presented land high enough to be able to place buildings within the project. Here, a panoramic view of the bayou environs displays the contrast of the wild bayou landscape and the luxurious building interior.



# A NEW HOUSTON

The design of the park reestablishes Buffalo Bayou as a central component of the City's cultural infrastructure, offering visitors the opportunity to gather and engage within Houston's most iconic natural landscape.

# ULI Case Studies

## Buffalo Bayou Park



SWA GROUP

The renewed Buffalo Bayou Park is a critical urban green space extending upstream of downtown Houston along Buffalo Bayou.

### PROJECT SUMMARY

Buffalo Bayou Park is a 160-acre linear park stretching for 2.3 miles west of downtown Houston, along the region's primary river. A \$58 million capital campaign transformed the park from a neglected drainage ditch into a citywide showpiece. Its ten acres of trails wind past seven major public art installations, three gardens of native flora, and over four pedestrian bridges; two festival lawns, a dog park, a skate park, a nature play area, a restaurant, and an art exhibit hall draw visitors from afar. Structures were carefully sited above the path of potential floods, while park elements within the valley were designed and built to be submerged during future floods—requiring cleanup, rather than reconstruction, after the inevitable floods.

The nonprofit Buffalo Bayou Partnership orchestrated a joint effort between public sector partners and private donors: private donors funded the park, in tandem with public sector improvements to the river channel and adjacent streets, and with a plan for ongoing maintenance. The park's completion was a milestone that launched a broader effort to reimagine the possibilities of streams across the region.

### QUICK FACTS

**City**  
Houston

**State/Province**  
TX

**Country**  
USA

**Metro Area**  
Houston

**Project type**  
District/Corridor/Community

**Land Uses**  
Connected Regional Bicycle Paths, Event Space, Open space, Restaurant, Visitor Center, Water Uses/Amenities, Wetland

**Site size**  
160 acres

**Keywords**  
Adaptive reuse, Amphitheater, Dog park, Flash flood area, Linear park, Park, Park system, Playground, Public art, Public-private partnership, Resilient design, Restaurants, Stormwater management, Trails, ULI Global Awards for Excellence 2017 Winner, Visitor center, Waterways

**Location type**  
Central City

**Website**  
<https://buffalobayou.org/visit/>

**Master plans**  
<https://issuu.com/buffalobayou>

**Address**  
105 Sabine St  
Houston, Texas 77007  
Fourth Ward

**Owners**  
Buffalo Bayou Partnership  
City of Houston

## Introduction

After Hurricane Harvey dropped 27 trillion gallons of rain onto metropolitan Houston, Buffalo Bayou Park in the city's west end was a complete mess. Roiling floodwaters filled the steep channel for weeks after the storm, even as the rest of the city slowly dried out. Lawns, paths, and picnic shelters that had cost tens of millions of dollars just a few years earlier had disappeared beneath the waves. Mountains of silt, looking like desert sand dunes, covered just about everything else.

Some onlookers wondered whether the money and work that had gone into beautifying the city's keystone river had all been for naught. "No, it's not a mistake," counters Guy Hagstette, project manager of Buffalo Bayou Park. "It comes with the territory."

Sure enough, just days later joggers were back on the trails. Even before the rains broke, the park's restaurant was back in business, with avocado toast proceeds donated to a relief fund. One week after the rains, park work crews were out in force to clean off silt and pick up trash and fallen trees, and bike rentals had resumed.

## Site and Idea

Both Houston and Texas were born along the banks of Buffalo Bayou in 1836, when the Allen brothers laid out a townsite where Buffalo and White Oak bayous meet.

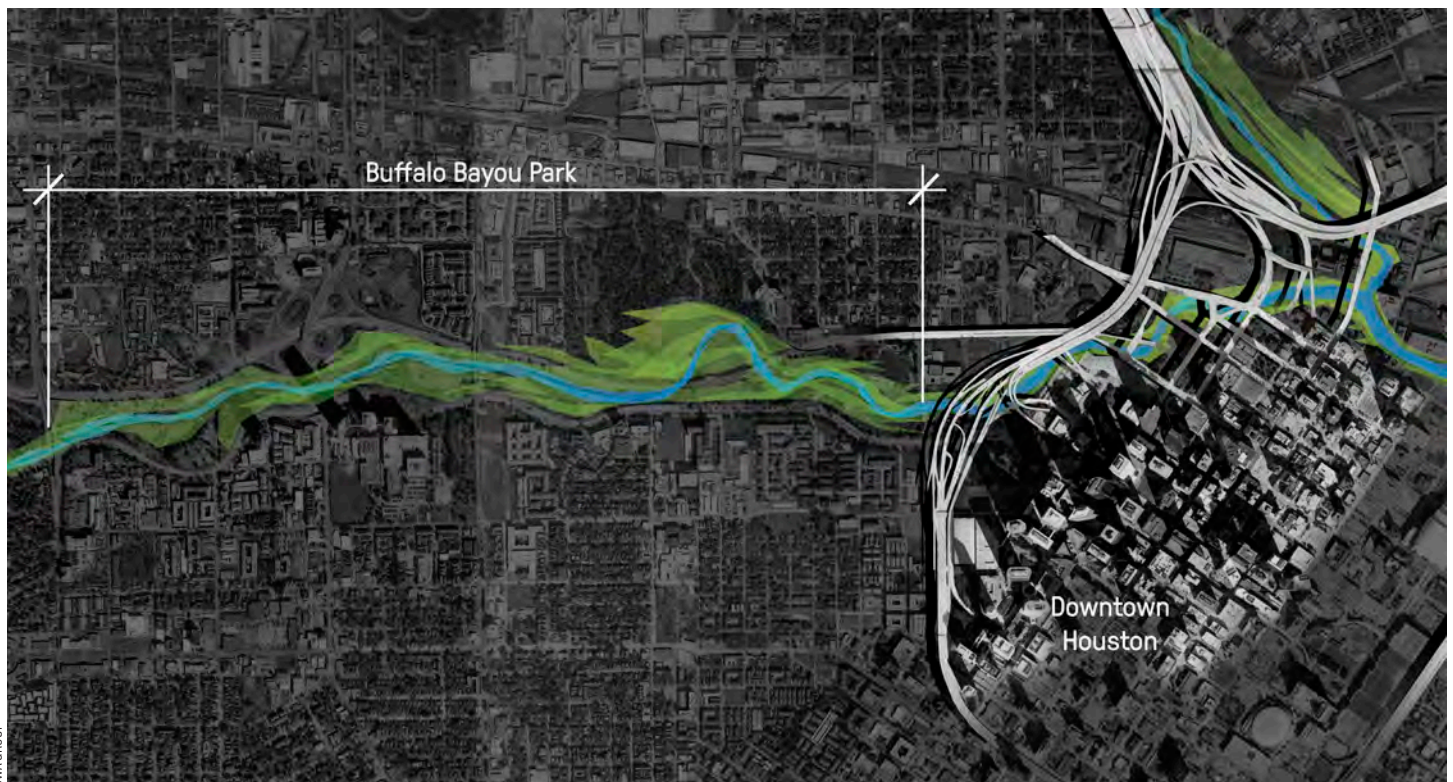
The genius behind their settling well inland of the Gulf of Mexico did not become truly apparent until after 1900, when a hurricane flattened the booming downriver city of Galveston. Port traffic relocated up the San Jacinto river, toward Houston, just as the first oil boom brought unprecedented wealth to southeast Texas. The city grew in every direction, and in 1913 commissioned its first city plan from Boston-based landscape architect Arthur Comey, who wrote that "the backbone of a park system for Houston will naturally be its bayou or creek valleys." Voters subsequently passed a bond to purchase parkland, including the bayou valleys and an army training camp to the west, which became Memorial Park.

The new city was hardly immune to disasters of its own: in 1935, days of relentless rain swept down Buffalo Bayou, killing seven and inundating downtown Houston buildings with five feet of water. The Harris County Flood Control District (HCFCD) was quickly assembled and put on a

fast track; by 1938, the federal government had appropriated funds to dam the bayou's tributaries and to straighten long stretches of the bayou's channel. Plans for the linear parks went down the drain.

Between 1953 and 1958, the bayou was straightened through the core of what is now Buffalo Bayou Park—west of downtown, between Sabine Street and Shepherd Drive. HCFCD drew up plans to encase the channel in concrete, to further speed floodwaters toward the ocean. But in a rare triumph for conservation, local activist Terry Hershey, longtime ULI member George Mitchell, and their Buffalo Bayou Preservation Association convinced local congressman George H.W. Bush to turn down a federal appropriation for the pavement.

Even as the leafy neighborhoods along the bayou blossomed into some of the city's most prosperous, the bayou itself lay neglected. Memorial Drive and Allen Parkway, the roads lining the bayou, were widened into forbidding expressways that completely sealed off the park. Within the valley were the bayou's often-turbulent waters, which claimed the grim title of Texas's most polluted waterway, plus "an asphalt trail that had withered away, no park benches, oil barrel trash



*Buffalo Bayou Park spans over 2.3 miles (3.7 km), creating over 160 acres of linear open space along Buffalo Bayou just west of downtown Houston.*

## SITE PLAN



*The design of the park reestablishes Buffalo Bayou as a central component of the city's cultural infrastructure. A series of gardens, event venues, and public art installations offer visitors opportunities to gather and engage within Houston's natural landscape.*

receptacles, no lighting, no amenities,” says Anne Olson, president of Buffalo Bayou Partnership. A few sculptures and memorials were dropped here and there, facing the highways, but the park gained a generally unsavory reputation.

The Buffalo Bayou Partnership (BBP) was founded in 1986 as part of Central Houston Inc., a civic organization dedicated to downtown, as part of an upwelling of civic pride coinciding with the city's 150th anniversary. From the start, Olson describes BBP as “very capital project driven, not an environmental or membership group,” as it sought funds and coordinated improvements. BBP's first capital project was Sesquicentennial Park, a 22-acre park and riverwalk through the downtown theater district (see ULI Case Study, Bayou Place). It opened in 1989 and was expanded in 1998—and inspired work on a visionary plan for the entire corridor, convened by BBP and cosponsored by the city, county, and HCFCD. There was an implicit division of labor from the start, with BBP charged with fundraising for incremental capital improvements.

The first two segments were completed downtown, whetting the appetite for a broader undertaking. In 2000, BBP, with the backing of local governments, commissioned a “Buffalo Bayou

and Beyond” plan from a group of consultants led by Thompson Design Group and EcoPlan. When completed in 2002, it outlined a vision to rehabilitate the bayou's ecology, expand its drainage capacity, improve its value in terms of scenery and recreation, and revitalize adjacent neighborhoods.

The plan's centerpiece was a ten-mile, 2,500-acre linear park to be completed by 2022, stretching from Memorial Park in the west, through downtown, to the Houston Ship Channel Turning Basin on the east. Flood control was a key rationale for the plan's promise of a “place that manages the impacts of flooding, protecting its people and assets from random acts of nature.” One of its key selling points was that better drainage could reduce flood risk and enable development along downtown's neglected north edge, with the bayou waterfront as a centerpiece.

The plan was released at a time of blossoming public interest in Houston's parks. When a large parking lot next to downtown's convention center came up for sale in 2004, a group of philanthropists convinced the mayor to join a public/private partnership to create a signature urban park, which opened in 2008 as Discovery Green Park. Meanwhile, progress on Buffalo Bayou slowly continued upstream; in 2006, the Sabine

Promenade opened, threading the riverwalks beneath the tangle of highway ramps at downtown's western edge, creating public access to the water's edge and creating a transition from the urbane downtown riverwalk to the wilder upstream park.

The Sabine Promenade caught the attention of the Kinder Foundation, which had been instrumental in convening the Discovery Green partnership. Rich and Nancy Kinder, who have focused their giving on green space, education, and quality of life in the Houston area, were initially drawn to the idea of improving water quality. They soon recognized the broader potential of extending the Sabine Promenade upriver, activating a network of green spaces across the city's west side, and began discussing a major gift.

The \$30 million gift that resulted made it possible for BBP not only to raise \$23.5 million in matching funds for the park, but also to secure public support for the project's construction and ongoing maintenance. With the funds in hand, the 2002 plan needed to be refined into detailed designs. SWA Group was the natural choice for this job, having designed the Sabine Promenade and even some of BBP's 1980s plans. Kevin Shanley, then principal of SWA Group, a global landscape

architecture and planning firm with a practice in Houston, had long been known around town as “Mr. Bayou” for decades of experience with ecology and flood control along the bayous.

## Planning and Design

Buffalo Bayou Park stretches for over two miles along the bayou from Sabine Street at its eastern end, upriver to Shepherd Drive. Just downriver is downtown Houston, and upriver is the prestigious River Oaks area, developed in the 1920s as a mixed-use suburb by ULI pioneer Hugh Potter. It is mostly bounded on the north by Memorial Drive and on the south by Allen Parkway, both six-lane limited-access roads; the park is also spanned by Waugh Drive and Montrose Boulevard, both busy north–south arterial roads. Most of the surrounding land is multifamily, with some large offices such as the Federal Reserve Bank.

A pair of paved upland trails bracket the bayou for the length of the park, connecting to the downtown riverwalks to the east as well as to the popular hiking and bridle trails in Memorial Park, half a mile from the Shepherd Drive entrance. The trails offer multiple options for loops of varying lengths when combined with four new

pedestrian bridges spanning the bayou and adjacent streets—two built by BBP, plus the city’s Rosemont Bridge (a pedestrian span adjacent to the Montrose Avenue bridge) and a second level of the Shepherd Drive Bridge, which was built by the state.

The new bridges, along with extensive traffic-calming measures, help improve connectivity from the park to the densely populated adjacent areas: 44,000 households live within a ten-minute walk of the park. Allen Parkway was reconfigured with elements like stoplights, at-grade crossings, and parking-lined service drives, so that the upland trail users no longer confront relentless highway traffic.

Highly visited attractions and structures are clustered into the park’s only two large upland areas: the Water Works on Sabine Street and Lost Lake toward the west end. These recreational elements, along with the more elaborate perennial gardens, are set toward the park’s outer edges, high above the water line and closer to adjacent neighborhoods. Even the bridge spans were calculated to clear the base flood elevation.

The Water Works is built atop and around a decommissioned two-acre enclosed drinking water reservoir, now called the Cistern. Facili-

ties at the Water Works include a visitor center and shop, a bike rental facility, and a festival lawn atop the cistern, adjacent to a skate park (built ten years prior) and a play area with nature-themed equipment. Upstream, a smaller visitor center, boathouse, and restaurant overlook Lost Lake, a tributary pond that was “lost” when its dam broke in the 1970s.

Eleanor Tinsley Park is another highly trafficked area, with a broad amphitheater used for large events that draw tens of thousands, like pop concerts and the city’s Independence Day festivities. It also has the park’s only sports field, a sand volleyball court; additional playing fields are available in nearby parks.

More tranquil, reflective spaces along the trails were created around wetland plantings, or seven public art installations. Some complement existing landscape features or sculptures, like the ceremonial grove of trees planted around the Houston Police Officers’ Memorial, or the semicircle of trees and shade structures around the Wortham Fountain. Other artwork was added to the new landscape, like the glowing “Tolerance” statues at the foot of the Rosemont Bridge and the “Monumental Moments” word sculptures that appear in glades along the lower footpath.



*New bridges and pathways were added to the park to provide access to Texas’s longest paddling trail. The added green infrastructure along the trails offers flood protection and other recreational benefits.*

Others are nature reserves, surrounded by lush landscapes of 14,000 native trees and 12 acres of prairies—selected and planted in partnership with volunteers and established local conservation organizations like Trees for Houston and the Katy Prairie Conservancy. Half the park’s lawns were replaced with native plants.

From the beginning, park elements were designed with water in mind—both floods and droughts. Just after the Buffalo Bayou and Beyond planning process had begun in 2001, Tropical Storm Allison hit the region and submerged many blocks along the bayou. By the time construction on the park began in 2012, the state had just seen its worst-ever year of drought.

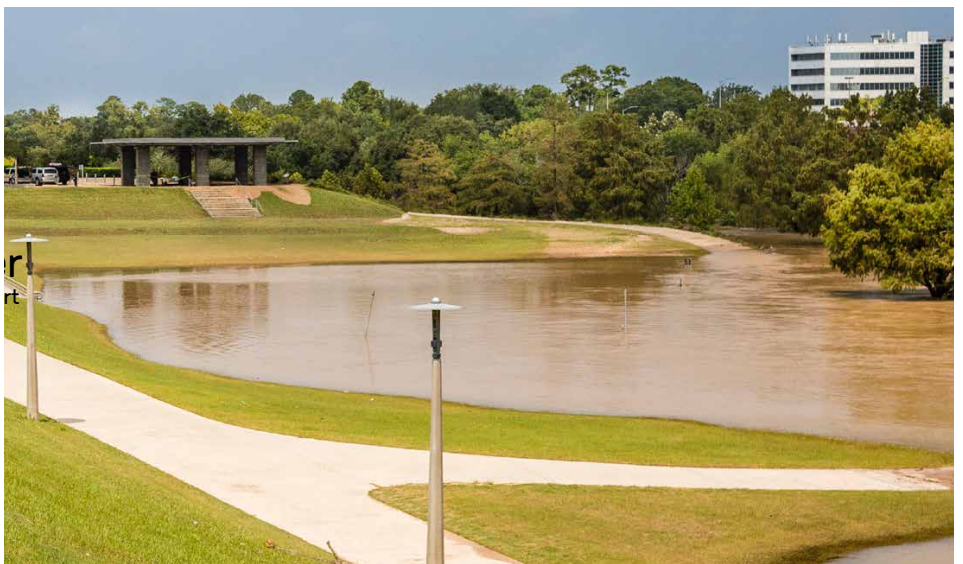
The water course was redesigned in order to reverse much of the streamlining that had been made in the 1950s, following intensive study of the bayou’s “fluvial geomorphology.” Meanders were restored with “flood benches,” like speed humps where fast-moving floodwater can spread out and drop silt and debris. After high water events, cleanup crews can focus their attention on these few locations.

Sunken areas that had been oxbows were restored as wetlands, and small tributaries lost to urbanization were restored as pumped-flow waterfalls, both providing additional habitat and flood capacity. Steep slopes were regraded, improving conveyance and capacity while also opening up views into the valley.

The park’s structures are designed to withstand not only inundation, but also impacts from whatever debris and detritus might wash through. They show off their heavy-duty construction through the use of hardy and submersible materials—like stout rectilinear shade pavilions of board-formed concrete, precast concrete light poles, oversized handrails, and concrete-filled galvanized steel bridge abutments that poke above the 100-year-flood height. These stronger specifications added 15-20 percent to the upfront cost. Everything built into the park, even the trash cans, has foundations anchored far below the surface to prevent them from washing away. Rounded corners, and surfaces tapered into the flow of future floodwaters, protect everything from bridge columns to walkways from erosion. Retaining walls slope downward to allow silt to slough off. Most of the park’s larger structures have ground floors intended to flood: water came up to the doors of the restaurant, which sits above a boat rental facility that was designed so that water could flow through.



SVA GROUP



BUFFALO BAYOU PARTNERSHIP



BUFFALO BAYOU PARTNERSHIP

*As part of the park updates, the slopes of the bayou banks were laid back to create both additional capacity for flood water movement and recreational space. The pictures above show Eleanor Tinsley Volleyball Court before hurricane Harvey (top), one week after (middle), and three weeks after (bottom).*

## Approvals, Finance, Construction

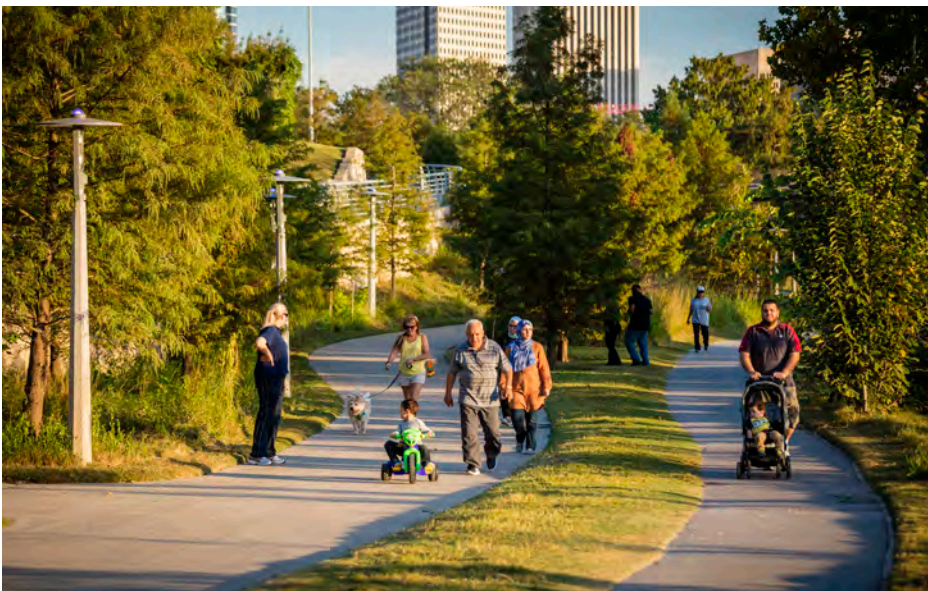
A complex set of improvements involving a waterway on government-owned land required intensive collaboration between numerous partners. At the table were the partners from the 2002 plan—BBP, the city, the county, and the HCFCD—plus the Kinder Foundation, the Downtown Redevelopment Authority, the state’s department of transportation (since the trail improvements had decades-old federal bike/pedestrian funding), and the U.S. Army Corps of Engineers to sign off on changes to tributaries and wetlands.

During early negotiations on the leadership gift, the Kinders wanted assurances that their gift would not just wash away—that both the HCFCD and the city would coordinate their own share of improvements and support the park’s long-term maintenance. A term sheet was drawn up and circulated not only to determine the project’s overall scope, but also to set maintenance agreements out to the year 2096.

An integral part of that process was understanding just how big of a job the city was signing up for. “We had to get an owner’s manual in place” for the park, says Hagstette, setting out “how often the trash would be picked up, so that we could define the costs, then identify a number that the city could commit to.” That led to hiring ETM Associates, a park maintenance consultancy led by a former operations director for Central Park, who builds up maintenance cost estimates from adding up thousands of line items and through extensive interviews with previous maintenance staff about the park’s needs. ETM has since returned to advise BBP on cost-effective maintenance, such as balancing in-house and contracted services.

The result of these negotiations was two sets of agreements that set the terms for the public/private partnership: a “tri-party agreement” outlined the basic framework for the design phase, and a later construction, operating, and maintenance agreement (COMA). BBP would build, operate, and maintain the park; the city, state, and HCFCD would build and maintain their own concurrent improvements; and the TIRZ would provide ongoing revenues for maintenance.

HCFCD built and maintains several features within the waterway that mitigate flood impacts. Its \$7.2 million Channel Conveyance Restoration at Buffalo Bayou Park project along BBP was administratively deemed to be “maintenance” of its 50-year-old works, in order to thin the regulatory burden.



JOHNNY SINGLETON, SWA GROUP

*A trail system over 10 miles long structures the park, offering separate facilities for bikes and pedestrian-only paths through the implementation of bridges and underpasses. The trail system provides uninterrupted movement through the entire stretch of the park, never requiring visitors to stop for vehicular traffic.*



SWA GROUP

*The Buffalo Bayou Partnership restored and repurposed the Cistern into a public space to house art installations, tours, and meditation sessions.*

At the same time, the park does not shy away from engaging with the sometimes-turbulent waters. A soft-surface path for walking and jogging threads close to (but at least 12 feet above) the water’s edge, which at times dives 30 feet below the busy streets. Its lower elevation, tree canopy, and white noise from the flowing water result in a setting entirely removed from the city noise above.

One of the few low-lying recreational areas is an expansive dog park, which had been informally established decades earlier and was deemed too important to move. Its water features are fil-

tered through a recirculating system intended to incorporate a nearby manmade wetland.

Designers tackled numerous challenges intrinsic to working within a waterway. Even though the site was now in the middle of the city, utilities had never really been extended into the park; this proved problematic when siting lights, drinking fountains, and other accommodations. The mucky soils underlying the park are ill-suited for structures; the airy footbridges sit on concrete pilings drilled up to 70 feet into the earth.



The city of Houston owns the underlying land and roadways; it contributed concurrent improvements—mostly access improvements such as re-designing Allen Parkway and pedestrian improvements along road bridges, but also improvements within the park such as a notable Jaume Plensa sculpture and the nearby Rosemont Bridge. Mayor Annise Parker's leadership was also an instrumental force in advancing the project through multiple agencies.

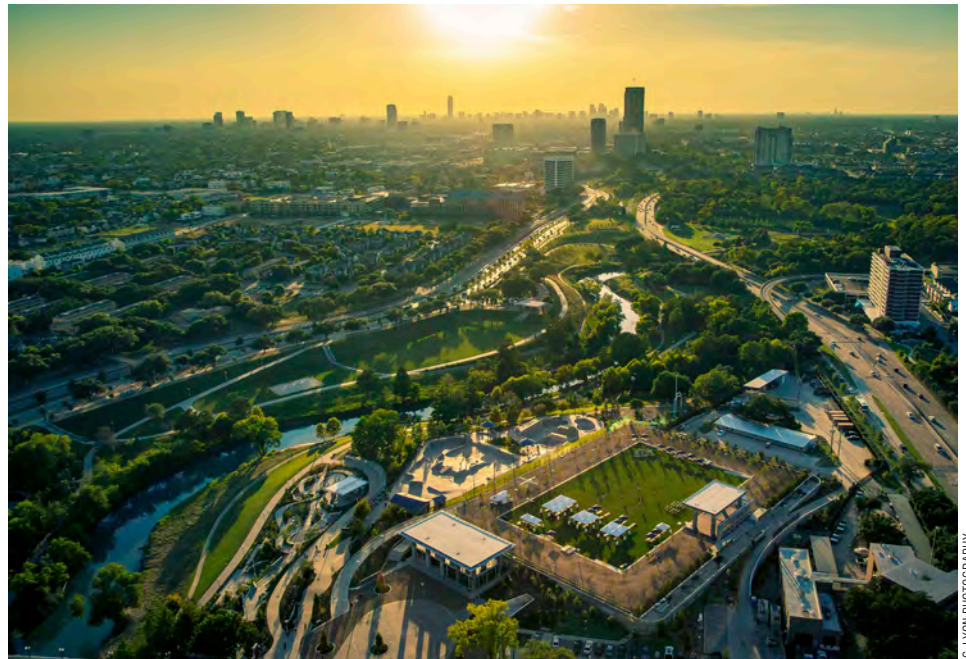
The Downtown Redevelopment Authority, which manages a tax increment finance district (a TIRZ, in Texas parlance) spanning about 80 blocks of downtown as well as the park, provides an annual \$2 million payment for ongoing maintenance. Its borders were enlarged to encompass the entire park, which required de-annexing part of the park from a different TIRZ. In addition, all funds from concession and rental revenue within the park are dedicated to a capital expenditure fund—e.g., the restaurant, event spaces, volleyball court, group fitness classes, commercial photography fees, and recreational equipment rentals; this reserve fund was around \$500,000 through 2016.

The Kinder Foundation's leadership gift was explicitly for site-wide earthwork, general landscaping, trails, and lighting. This allowed BBP to begin planning and construction immediately, while still fundraising around specific amenities (such as fountains, buildings, and artwork) that could be added onto the project scope later.

Public involvement for the 2010 master plan revealed three camps of public opinion among residents. Many recognized that the trails were in bad shape and primarily wanted incremental improvements, like restrooms. Some wanted a park resembling the highly urbanized San Antonio Riverwalk, and others wanted zero change—hardly the most “natural” option, given that both the waterway's shape and the invasive species along it were artificial. Education about the ecological value of the proposed changes helped smooth that process along.

## Construction

Coordinating a project with landscape, building, and waterway components, and doing so on the tight timetable required by the Kinder Foundation, was always going to be a challenge, and BBP was prepared to have to juggle multiple general contractors sharing the site. Luckily, as a private entity they could select contractors based on experience. A single general contractor, Millis



G. LYON PHOTOGRAPHY



G. LYON PHOTOGRAPHY

*Because the park is built in a floodway, water will rise up to 20 feet several times a year during Houston's sporadic torrential rainfalls, inundating and submerging everything in the park. At the right is the Water Works.*

Development & Construction, which had pertinent experience on both buildings and parks, was the initial low bidder for bridges and site work. Millis was then able to oversee the entire project as buildings were added to the project scope.

SWA was retained through the construction process, as well. “In order to hang on to the design intent, there's a real benefit to have the design firm continue with construction administration services,” says Hagstette. Tim Peterson of SWA adds that BBP was “considering having a separate construction management

team—but this is specialty work that big construction companies don't do [themselves]. We thought that level would drive up costs. Instead, we selected a team of contractors who could build this work.”

A key early challenge was that the site had never been adequately surveyed; indeed, many old plat maps had used the ever-shifting bayou as a boundary. Even though the site was 98 percent owned by the city of Houston, nobody had ever cleared up which department was responsible for what part—and where the bayou boundaries were for two 19th-century cemeteries that owned



*The park was designed to facilitate many different types of engagement with nature through cycling, jogging, paddling, and exploration. A nature play area provides intimate contact with natural and organic features for children.*

the other 2 percent of the land. Luckily, everyone was prepared to put aside potential differences: the city accepted a new map in lieu of a traditional survey to proceed with building permits, and the cemeteries readily granted trail easements in exchange for site and access improvements.

The city's park director required that construction proceed in stages, so that parts of the park were always open to the public. This also has given some areas' plantings a head start on growing in, an effect that will average out over time. A bimonthly project newsletter and public construction tours helped keep the public excited about the project's progress.

The dual-span Rosemont Pedestrian Bridge, the first major feature to open, proved to be a feat of engineering. One span crosses between the two bayou trails, while another span leaps over Memorial Drive to connect to a rail-trail and a park to its north. The span's overlapping cantilevers and double curvature seemed like an impossible feat, but Millis recommended King Fabrication, a local metal fabricator whose prior work on pipelines suited the task.

### Performance

The park's tremendous popularity has surpassed all expectations, instantly creating a regional amenity out of what had been little more

than a drainage ditch. During the first year, the two visitor centers welcomed 14,000 patrons; a trail user counter recorded nearly 150,000 visitors in one month. The park's bridges, with greenery in the foreground and the city skyline just beyond, have become the iconic photo opportunity in downtown Houston. Linking downtown to a park network that stretches up to Memorial Park has increased park visitation all along the corridor, and created a common ground between the divergent neighborhoods on either side of the bayou.

Event spaces have proved particularly popular, in line with the broader trend toward experiential places. A light-and-sound installation in the cistern drew 30,000 people in 2017, despite limited visitor capacity inside the structure. The jewel-box restaurant, which offers a one-of-a-kind "lost in the woods" setting, is booked far in advance for evening special events—helping to sustain a more accessibly priced all-day menu for park visitors.

The restaurant is the largest commercial tenant within the park; food trucks also fill parking courts on weekends and during special events. "We hired a broker to find us a couple of vendors," says Olson. The selected vendor "had wanted to do a full-service restaurant, but came back and changed it to breakfast, lunch, and special events" in the evening, when park foot traffic is lower. BBP collects a base rent plus a percentage of gross sales.

The park's completion has been a boon to properties near the park. One early development that sought to take advantage of the new park, the seven-story Riva at the Park condo-



*During Hurricane Harvey, the Boat House at Lost Lake flooded up to its second story, which houses a restaurant. After the floodwaters receded, the landscape and infrastructure show no sign that they were underwater two weeks before.*



ALBERT VEERNA/PESTO

*The interior of the new restaurant and event space building at Lost Lake rests above the 100-year flood elevation. Here, visitors dine with a panoramic view of the bayou environs, experiencing the contrast of the wildness of the bayou landscape and the luxuriousness of the building's interior.*

minium, proved so popular during pre-sales that it was redesigned as a ten-story building. An examination of 2015 tax assessment data shows that single-family houses within a ten-minute walk of Buffalo Bayou (both the park and the wilder upriver stretches) were worth 16 percent more than houses within a 20-minute walk.

### Flood Performance

After Harvey, “the new parks and trails along our bayous have come back quickly,” says Hagstette, owing to smart design and budgeting decisions. “Money had to be spent” on flood cleanup, he continues, “but it was built into the plan”—namely, the funds set aside for maintenance and repairs. An outpouring of volunteer support after the flood also came in handy, especially for replanting.

Floodwaters rose 38.7 feet at Buffalo Bayou Park’s western end, but the upper third of the park was not submerged for long. The flood’s height was not entirely unprecedented: it was only five feet above the floods on Memorial Day 2015, four months before the park’s grand opening. Yet the sheer volume of water over the subsequent weeks proved problem-

atic; the unprecedented draining of the overwhelmed Addicks and Barker reservoirs down the bayou drowned trees and grasses in the lower two-thirds of the park, as well as many of the park’s resident bats. When the water finally receded, almost 40,000 cubic yards (4,000 truckloads) of silt and debris were left behind, along with eroded riverbanks.

Park features meant to perform double duty as flood storage, including active recreation fields and passive sculptural elements, were submerged for weeks. Resilient systems and networks meant that backups were available for park users to enjoy: for instance, the lower-level footpath was out of commission for months, but joggers were back on the upper-level paths within days. The one attraction that closed for reconstruction and reconfiguration after Harvey was the dog park, whose location within the valley left it vulnerable to repeated flooding that overwhelmed the water filtration system with silt.

Lighting has proved to be an ongoing design and maintenance challenge. LEDs have been a boon in many regards; BBP has taken full advantage of their artistic possibilities throughout the park with moody lamps that

## OTHER PARTICIPANTS

### Funding Partners

Buffalo Bayou Partnership  
Kinder Foundation  
City of Houston  
Harris County Flood Control District  
Tax Increment Reinvestment Zone #3

## DEVELOPMENT TEAM

### Prime/ Master Planner/ Lead Designer

SWA Group

### Architecture

Page

### Horticultural/Specialty Landscape

#### Architecture

Reed Hilderbrand

### General Contractor

Millis Development & Construction, Inc.

### Civil Engineering

United Engineers

### MEP Engineering

Hunt & Hunt Engineering, Corp.

### Geotechnical

Aviles Engineers

### Structural Engineers

RDP Engineers

### Traffic Engineers

AIA Engineers

### Wayfinding

Marek Hill Design

### Lighting

L’Observatoire and artist Stephen Kornis

### Water Feature

Greenscape Pump Services

### Irrigation Design

Sweeney & Associates

### Playground Consultants

Natural Learning Initiative. College of Design, NC State University

### ADA Consultant

Advanced Design Solutions

### Interviewees

Kerri da Silva, associate, SWA Group  
Guy Hagstette, director of parks and civic projects, Kinder Foundation; former project manager, Buffalo Bayou Park  
Anne Olson, president, Buffalo Bayou Partnership  
Tim Peterson, principal, SWA Group  
Michael Robinson, associate, SWA Group

### Website

Tour: <https://buffalobayou.org/visit/destination/buffalo-bayou-park/>



JONNU SINGLETON, SWA GROUP

*One of the most significant improvements is the transformation of the landscape to a more natural and self-sustaining state by reintroducing native landscapes and restoring diversity and balance to the terrain. Over 14,000 native trees were planted in the park over the course of construction.*

track the moon cycle, and with the blockbuster art installation inside the cistern. However, LEDs are essentially circuit boards, which inevitably short-circuit when plunged into muddy water—which still happens, despite countermeasures like mounting electrical equipment within water-resistant fixtures atop the poles, and water sensors that cut off electricity during floods. (The need for flood resistance also explains why the site cannot rely on solar panels, which are also circuit boards.) After each flood, park staff disassemble and clean hundreds of lights and replace hundreds more; newer generations of equipment are improving.

Mitigating erosion and stabilizing both the channel and slopes also will require additional engineering work after Harvey. Riprap, gabions filled with recycled concrete, and coir all hold down parts of the channel, but high-stress areas underneath bridges and opposite outfalls have been difficult to stabilize with roots given the frequency and duration of flooding.

## Observations Planning for the future

The west end of Buffalo Bayou Park is helping inform similar efforts throughout the region. The east end of Buffalo Bayou is much wider and thus less flood-prone, but runs through an area long characterized by shipping, heavy industry, and the attendant environmental justice concerns. BBP has been purchasing property and easements for parks and trails, and is currently in the midst of a detailed planning process for parks and neighborhoods alongside.

Olson already sees that the park will have a very different character, showcasing its wilder landscape alongside the “cultural and industrial heritage of an area that still has a lot of industry. We own some really cool abandoned industrial artifacts, like an abandoned sewage treatment plant, wharf, and gantries,” and hope to incorporate those into the park. In a nod to erosion that affected trails close to the waterway, easements and setbacks will be wider on the east end.

“Equity is a theme that’s a thread in all of our conversations” about the east end, contin-

ues Olson, adding that BBP has been involved in the High Line Network of urban parks that reuse infrastructure as a catalyst for equitable development. A wider focus also means broader stakeholder engagement, “new ways to reach neighbors instead of standard boring meetings,” Olson says.

At a regional scale, the Bayou Greenways 2020 initiative aims to fulfill the century-old promise of a county-wide network of bayou parks by expanding on the network established at Buffalo Bayou Park. It will include 3,000 acres of parkland along 150 miles of waterway, and 80 miles of new trails, bringing 60 percent of Houstonians within 1.5 miles of a greenway park. The \$220 million initiative was also launched with a leadership gift of \$50 million from the Kinder Foundation and voter-approved park bonds.

## Lessons Learned

The funding partnership that created Buffalo Bayou Park played to the strengths of each sector: philanthropists’ vision, the public sector’s staying power, and a park conservancy’s flexibility. Strategically, the partnership started with a big vision and a phasing strategy. This planning enabled the leadership gift and political support to catalyze quick action, and impressive results. The Kinder Foundation did not just want a quick ribbon-cutting, they demanded a lasting legacy; their insistence upon understanding, planning for, and sustaining funding for eventual maintenance and repairs has ensured that the park has bounced back after multiple floods.

Designing resilient features into the park was always the intent, but its importance was underscored by flood events that coincided with the park’s planning processes. These decisions have paid dividends not just in the aftermath of frequent floods, but also in dealing with everyday wear and tear: heavy-duty materials and redundant systems help the park manage big crowds, multiple events, and numerous user groups simultaneously. Carefully tending to the vision through construction required careful management by the architects, contractor, and partnership.

## PROJECT INFORMATION

### Financing sources

Kinder Foundation	\$30,000,000
Additional private grants	\$23,500,000
Additional grants for cistern	\$1,500,000
<b>Subtotal: Buffalo Bayou Partnership</b>	<b>\$60,000,000</b>
<b>Harris County Flood Control District</b>	<b>\$7,200,000</b>
TIRZ #3 for Allen Parkway improvements	\$10,000,000
TIRZ #5 for Rosemont Bridge	\$5,000,000
Texas DOT for trails and Shepherd Bridge	\$6,000,000
Houston Arts Alliance gift of “Tolerance” sculptures	N/A
<b>Subtotal: City of Houston</b>	<b>\$21,000,000</b>

### Park amenities

160 acre park	Two visitors centers
10 miles of walking/biking trails	30,000 square foot skate park
Seven public art installations	Nature play area
Four pedestrian bridges	Amphitheater
Two-acre dog park	

### Development timeline

The Glenwood Cemetery opens	1871
Arthur Coleman Comey's Planning Report for the Houston Park Commission published as first proposal for Buffalo Bayou improvements	1912
Buffalo Bayou Preservation Association (BBPA) is formed to protect the bayou	1966
Cancellation of the channelization program	1971
Buffalo Bayou Partnership founded under Central Houston	1986
Task force report outlines recommendations for preservation and improvement of the bayou and consists of a re-evaluation of earlier plans	1986
Buffalo Bayou and Beyond 20-year master plan completed	2002
Kinder Foundation awards catalyst \$30 million gift for Buffalo Bayou Park—Shepherd to Sabine	2010
Buffalo Bayou Park Master Plan completed	2011
Buffalo Bayou Park construction begins	2012
Completed construction of Buffalo Bayou Park Phase I	2013
Assumed maintenance and operation of Buffalo Bayou Park Phase I	2014
Completed and assumed full-scale maintenance and operation of Buffalo Bayou Park	2015

THE ULTIMATE GUIDE TO

# BUFFALO BAYOU PARK

## WELCOME TO HOUSTON'S NEW FRONT PORCH.

### WE DIDN'T KNOW WE NEEDED BUFFALO BAYOU PARK.

No one was clamoring for our own version of Central Park or Navy Pier; no one was holding their breath for a dramatic makeover of the waterway best known for eating cars and flooding. We had our makeshift dog park at Allen Parkway and Montrose, a few dug-out put-in spots along the bayou that only the truly adventurous took advantage of, and a couple of hidden wetlands areas that felt like places out of time, trapped between the riparian edge of the silt-brown water and the traffic screaming past on Memorial Drive.

But if Houston at large isn't great at identifying its needs, the folks at the Buffalo Bayou Partnership, which celebrated its 30th anniversary last year, are. Because since they officially opened the brand-new Buffalo Bayou Park to the public in October 2015, it has been an unparalleled success.

Day and night, pedestrians walk the park's five-foot-wide asphalt Kinder Footpaths, kids clamber over felled logs and beat on colorful drums in the Barbara Fish Daniel Nature Play Area, cyclists whiz down the Sandy Reed Memorial Trail that hugs the water near Shepherd Drive, and dogs dash through the ponds at the Johnny Steele Dog Park (turns out we really did

need that one). In just 16 months, the park has become a landmark on par with the Astrodome...only more useful. It turns out Houstonians really *do* enjoy getting outdoors.

Built in typically Houstonian style through a public-private partnership, the \$58 million undertaking was financed in part by a \$30 million donation from the Kinder Foundation (the same folks who made Discovery Green possible), with the aim of building a beating heart out of the city's main artery, Buffalo Bayou, which has been the source of creation in Houston since the Allen Brothers founded our big, sprawling swamp on its banks in 1836. And it's the non-profit Buffalo Bayou Partnership alone—not the City of Houston, nor any other public entity—that's responsible for maintaining the 160-acre park and its 10-mile waterway, making it even more unusual among its national peers.

Most important: The park is built to flood, unlike most other areas of our city, meaning that our fabulous new front porch will be here to welcome generations of Houstonians to come. Within these pages, *Houstonia's* guide to everything you need to know to make the most out of our city's newest civic treasure.

— Katharine Shilvert

# LOST AND FOUND

A perfect starting point for discovering the park

**A**MONG THE MANY ADDITIONS and improvements made to Buffalo Bayou Park over the last few years, **THE DUNLAVY** and **LOST LAKE** stand out as two of its most useful—and not just because of the ample public parking out front. Recovered from the remnants of a lake that was, yes, lost in the 1970s when a dam broke, the lovely Lost Lake serves as an important drainage facility as well as a protected wetlands area, hosting everything from water lilies to tiny turtles. Shimmering above the lake is The Dunlavy, a striking, glass-and-wood modernist creation that overlooks the lake on one side and the bayou on the other. Here, you'll find one of the park's two visitor centers, where you can rent kayaks, canoes and stand-up paddleboards from Bayou City Adventures, as well as **THE KITCHEN AT THE DUNLAVY**.

Open daily from 7 a.m. to 2 p.m., The Kitchen serves grab-and-go breakfasts and lunches for those on the run, but there's often a line out the door as people wait patiently for a spot in the dining room—especially when weekend brunch rolls around. Inside, floor-to-ceiling glass windows with



views onto a heavily wooded section of the bayou give the illusion of eating in a particularly lavish treehouse, while dozens of chandeliers twinkle overhead. The dining room is closed in the evenings for private events, but keep an eye out for occasional evening happy hours that are open to the public.

Not dining in? Order The Dunlavy Picnic Lunch—a tray filled with Houston Dairymaids cheeses, sliced prosciutto, genoa salami, country pâté, chicken liver mousse, hummus, vegetable crudité, a hard-boiled egg and various breads—then abscond to one of our favorite hidden meadows, just around the corner. From the visitor center, head west along the pedestrian path until the trees give way to a wide-open grassy lawn just north of the Beth Yeshurun Cemetery. There's no battling the crowds here, even on a sunny day, and if you're in luck, the rocky waterfall at the McGovern Cascade may just throw a few rainbows your way. —*AD*

## EXPLORE ON TWO WHEELS

Watercraft aren't the only vehicles available to rent in the park. At Bike Barn, headquartered at the **WATER WORKS** (see p. 46), a whole fleet of two-wheelers—kids' bikes, trailers, tandems, cruisers and hybrids—is available by the hour (\$6 and up) or for the day (\$39 and up). And the nearby **SANDY REED MEMORIAL TRAIL**, stretching from Shepherd Drive to Sabine Street, was recently realigned and resurfaced for your cruising pleasure. —*AD*



THE DUNLAVY: SILVORNS PHOTOGRAPHY  
PICNIC SPOT: MAX BURKHALTER MAP: TANYIA JOHNSON



THE ULTIMATE  
GUIDE TO

# BUFFALO BAYOU PARK



To see more  
of this story,  
tune into  
**NEWSFIX**  
on CW39,  
Feb. 14  
and 19.

## BUILT TO SPILL

How do you plan a park that's meant to flood?

**WHEN THE TEAM FROM SWA GROUP**, an international landscape architecture firm, collaborated with the Buffalo Bayou Partnership on a master plan for Buffalo Bayou Park, they faced unique challenges they hadn't quite encountered before.

Not only is ours an urban park that runs along a natural, running body of water, it's surrounded on both sides by development. And since the bayou is inextricably linked to Houston's drainage system, they knew that at times, the park was going to get really, *really* wet.

"The first and largest obstacle is just the fact that if you're trying to put in permanent park improvements, and anything below the very tops of the slopes will go underwater relatively frequently—at least a couple times a year," says Scott McCready, a principal at SWA.

Because of this, the plan called for raw concrete and galvanized steel, which holds up in floods and is easy to clean afterward. All of the electrical wiring is above the floodplain, and the lighting fixtures include an automatic off-switch which activates when waters rise to a certain level.

The lawn has been reduced by about 50 percent, McCready says, replaced by nearly 14,000 trees, as well as wildflowers and native grasses whose more robust root systems absorb more water deeper into the ground. These plants provide the additional benefit of creating a natural habitat for local wildlife and allowing park-goers to experience nature rarely glimpsed in an urban setting.

The result is both seductive and surprising: a protected pocket of Houston's native landscape, in the middle of the busiest part of the city, that feels entirely removed from urban life. "We wanted to create a place for people, but we also really wanted to maintain and enhance the qual-

ity from an ecological standpoint. That involved compromises, including natural banks. We left a rough natural bayou edge, and it's not going to be a perfectly pristine edge," McCready says. "It will gradually erode on the edges, and it requires a lot of maintenance. That was a calculated risk and consideration for the project long-term."

That maintenance includes removing silt buildup on bayou banks, which can sometimes add eight inches or more after a significant rain event, as well as removing invasive species from the water and its banks and cleaning up after floods. Meanwhile, some parts of the park—like Johnny Steele Dog Park, which has gone underwater in every major rain event since its opening—will always require a higher level of maintenance.

"We kept the park where there was basically an existing dog park, and it's in a low spot. It was understood that it would go underwater, but it was exacerbated in this record year. And it also rained a lot while we were under construction, so it was harder for the plants, which help absorb water, to get established early on," McCready says, adding that the Partnership is exploring maintenance options that might help mitigate the impact of flooding.

Like so many others, McCready sees the park as a game-changer. "At the end of the day, parks and trails aren't just things that are nice to have, they're things that are necessary to have for the health and happiness of Houston's citizens," he says. "It's an added benefit where we already have a natural area existing. It helps get Houstonians back in touch with the natural systems that aren't easily identified in the core of the city, and to still be able to see that firsthand raises awareness about the importance of preserving and enhancing them." —*Roxanna Asgarian*

### WATCH

For an incredible aerial tour of Buffalo Bayou Park, visit [houstoniamag.com/dronetour](http://houstoniamag.com/dronetour)



# THE 5 MOST INSTAGRAM-WORTHY SPOTS ALONG THE BAYOU

Because if you don't filter, share and hashtag your day in the park—  
#parkitlikeitshot, people—you might as well stay home.

1

## WAUGH BRIDGE BAT COLONY

There are plenty of spots to get a view of this nightly spectacular, as 250,000 Mexican freetail bats emerge from their bridge habitat, but the official viewing overhang on the Allen Parkway side offers the clearest shots. The bats conveniently swarm out at dusk—or as photographers call it, the magic hour—offering beautiful images against a sunset sky. (Just don't use that bat-scaring flash!)



3

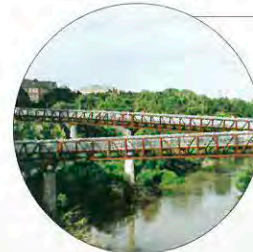
## ROSEMONT BRIDGE

Two steel and concrete bridges, which connect across the bayou at different levels, are pretty enough for a picture in themselves, but they also offer some of the best views of the downtown skyline in the city.

2

## JOHNNY STEELE DOG PARK

When it's not flooded out, this 2-acre park is always filled with a passel of pooches running and playing—go ahead, use the #dogstagram hashtag when you take that selfie with Spot. It's worth it.



Best alternative  
bat-viewing spot

Best wildlife  
spotting

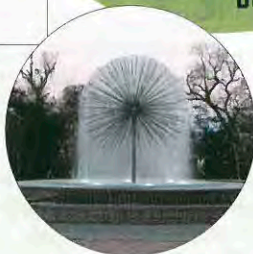
Best place to see  
and be seen



4

## GUS WORTHAM FOUNTAIN

A generous misting from this dandelion-shaped water feature—inspired by a similar sculpture in Australia and a fixture next to Allen Parkway since 1978—is a cooling perk for joggers and other bystanders on hot days. Capturing its vapor halo, especially when there are light prisms of rainbow floating throughout, is a challenging but worthy 'gram goal.



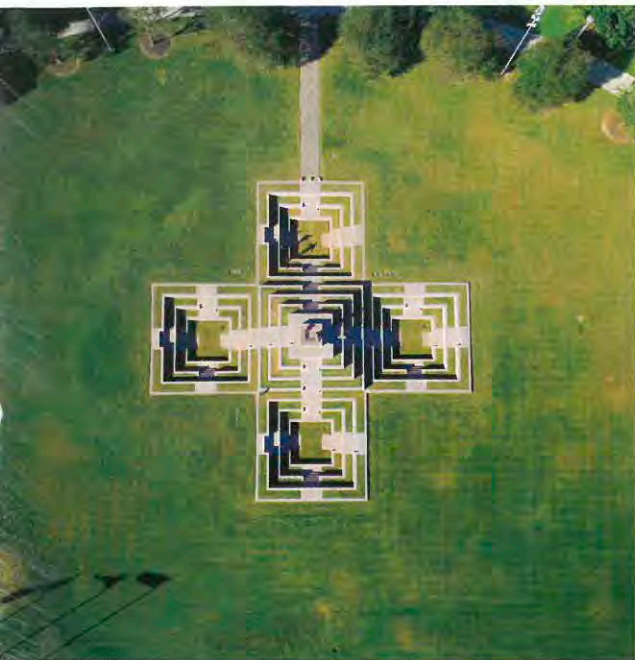
5

## TOLERANCE

This series of sculptures by Jaume Plensa, installed in 2011, is most intriguing on an overcast day, when their aluminum frames, carved with words from languages across the world, fade into the fog and each kneeling figure casts a ghostly form. Moody, yes, but with a message that's much-needed right now.

—Sarah Rifea Nielsen—

# TRACKING YOUR STEPS



HOUSTON POLICE OFFICERS' MEMORIAL

**LAST YEAR**, the Buffalo Bayou Partnership placed temporary counters in 13 different locations throughout the park. Using infrared technology, they not only calculated how many pedestrians and bicyclists were using these areas on a daily basis, but identified the peak times for each.

Three in particular proved so popular that the counters “broke,” which is to say they hit their internal counting limit of 14,000 people per month before February was even over. Those spots continue to be three of the most popular today, each for its own reason:

## GREEN TREE NATURE AREA

**WHERE:** On the north side of the bayou between Montrose and Waugh, across Memorial Drive from Spotts Park

**WHY:** This mini-nature preserve features a gravel trail that allows pedestrians to explore a section of the park that's buffered from the sounds of the city. Tall pines tower overhead, while rabbits, squirrels and dozens of different birds scurry in the brush.

**PEAK USAGE:** 5–7 p.m. weekdays, 10–11 a.m. weekends

**WHY:** In addition to being adjacent to one of the park's most popular jogging trails, the striking, Greek cross-shaped monument—designed by Texas-born Jesús Bautista Moroles and installed in 1990—has become a photo-op in and of itself.

**PEAK USAGE:** 5–7 p.m. weekdays, 11 a.m.–noon weekends

## ELEANOR TINSLEY PARK

**WHERE:** Just off Allen Parkway between Park Vista Dr. and Crosby St.

**WHY:** Since its designation in 1998, this gently sloping park with a dramatic downtown backdrop has been the site of many Houston festivals and events, from Free Press Summer Fest to the annual Fourth of July fireworks celebration.

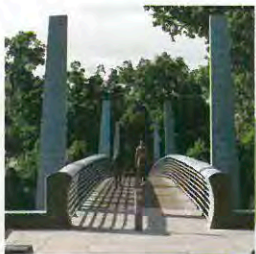
**PEAK USAGE:** 5–7 p.m. weekdays, 10–11 a.m. weekends

—KS

## THE HOUSTON POLICE OFFICERS' MEMORIAL

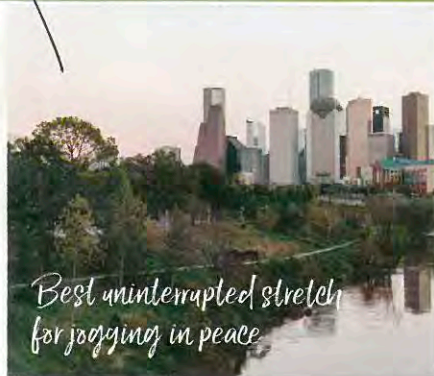
**WHERE:** South of Glenwood Cemetery and north of Memorial Drive, on a bending section of the bayou crossed by the Carruth Bridge

*Best place to contemplate the pros and cons of oil money*



CARRUTH BRIDGE

HOUSTON POLICE OFFICERS' MEMORIAL



*Best uninterrupted stretch for jogging in peace*

HOUSTON POLICE OFFICERS' MEMORIAL: BLUE PRINT FILM CO  
MAX BURKHALTER

## A NOTE ON ETIQUETTE

Long before the park around it was transformed into Houston's No. 1 pedestrian destination, the **HOUSTON POLICE OFFICERS' MEMORIAL** has stood quietly and starkly just off Memorial Drive, guarded day and night by HPD officers who consider the task an honor.

Today, those guards are still there around the clock, but the memorial itself has drawn attention for reasons other than the names of over 100 fallen officers chiseled into its granite face. The steps that lead up each of the pyramid's four sides meet at a small reflecting pool, which, at 12 feet high, also happens to be one of the best spots in the city for snagging that perfect skyline shot. We get it. But it's also worth remembering that the memorial is just that—a tribute to men and women lost in the line of duty. (In a sad side note, the sculptor himself, Jesús Bautista Moroles, was killed in a car accident in 2015 at the age of 64.)

To that end, a few etiquette guidelines to follow the next time you visit: While you're invited to climb the pyramid to visit the reflecting pool, this isn't the place to propose to your partner or engage in an endless stream of selfies, nor is it the spot to post up with a picnic blanket (psssst...there's a great grassy meadow with big oak trees for that just across the bayou). Pay your respects, snap that shot, and continue exploring the park beyond. After all, there are 159 more acres to visit while you're here. —KS



# THE SMELL OF SUCCESS

The Buffalo Bayou Regatta celebrates its 45th wet year.

**THEY CALLED IT, FOR OBVIOUS REASONS,** The Reeking Regatta: The World's Smelliest Canoe Race. Their promotional posters featured a paddler in a gas mask. This was 1972, long before Buffalo Bayou rehabbed its image and the city cleared out its sewage and sunken cars. It was the brainchild of Carl Gilson and a few friends, who hosted the 15-mile race to showcase the potential of Houston's iconic, neglected waterway.

Over 100 Houstonians braved the stank that first year, and they discovered something interesting: The water wasn't quite as nasty as the public perceived it to be. That said, Gilson concedes, the bayou "is a lot different today than it was then," as is the regatta that bears its name.

Now in its 45th year, and sponsored by the Buffalo Bayou Partnership, it's the largest canoe race in Texas, and the fifth largest in the country. Over 800 people launch from San Felipe and Voss, steering canoes and kayaks through the twisting channel toward the finish line at Sesquicentennial Park. There, participants are greeted by a zydeco band, beer from Saint Arnold and adoring fans. The average race time is three hours; last year's winner clocked in at a speedy 90 minutes.

"Some people are super-intense," says Helena Finley, another veteran participant. "And then you get people who have a heavy cooler in the middle of their boat, and their music is blaring. They're going to make a day of it, moseying on down the bayou."

## PADDLE OUT

Though the section of Buffalo Bayou that runs through the park is 10 miles long, the Texas Parks and Wildlife Department's designated paddle trail is more than twice that at 26 miles. **BAYOU CITY ADVENTURES**, an outfitter based at **LOST LAKE** (3422 Allen Parkway), has the equipment and expertise to set you up to cover as much (or as little) of that trail as you like. The group offers all variety of watercraft rentals, including kayaks, canoes and newly popular stand-up paddleboards. For the nautically inexperienced, guides lead introductory classes and kayaking tours, while a year-round VIP pass (\$150) allows for unlimited trips.—AD

Gilson is the regatta's director, and he's thrilled his race has encouraged people to see the waterway as an opportunity for recreation and a return to nature. "When you're in the bayou, you hardly know you're in the city of Houston," he says. "Except for when a Styrofoam cup floats by every now and again, which brings you back to reality." —Adam Dosler

*This year's Buffalo Bayou Regatta takes place March 11 from 7 a.m. to 2 p.m.*

# WILD WILD LIFE

There's more to Buffalo Bayou than its now-famous bats.

**ALISA KLINE**, the park's Texas Master Naturalist, clues us in on some surprising species to watch for:



## ALLIGATOR GAR

There are plenty of fish occupying our urban waterways, but none quite as odd as this large—routinely six feet long, and over 100 pounds—prehistoric-looking specimen, with its flat, elongated snout and slender body. Do a Google search for “alligator gar” and “Buffalo Bayou” and you’ll find plenty of photos of fishermen who caught disturbingly large gar in the bayou.



## CORAL SNAKES

One of only 15 venomous snakes native to Texas, the coral has distinctive bands of red, yellow and black that make it easily noticeable. If you run into one, don't worry: They're remarkably timid, and Kline points out that their bites are so uncommon, hospitals rarely carry the anti-venom. (Actually, that doesn't make us feel better).



## SWAINSON HAWKS

Plenty of birds of prey occupy the skies over Houston, but this hawk is unique for its food of choice: bats. “They dive into the swarm, grab a bat in their claws and eat it on the wing, then dive down for another,” Kline explains. “Kind of like fast food.” You can see the hawks most nights, at the same time that the Waugh Bridge Bat Colony makes its evening ascent.



## CLIFF SWALLOWS

The Waugh Drive Bridge offers more than bats; you'll also want to look for the small hut nests made of mud that cling to its pillar walls. According to Kline, migratory swallows traveling north return to the same nests each year around January or February. If you're lucky, you might glimpse the chicks poking their heads out to look for food when broods begin to hatch in spring and summer.



## BEAVERS

That's right, Houston. We have beavers on Buffalo Bayou. “I've only seen a beaver once, many years ago down near Shepherd,” says Kline, “but I see beaver damage frequently.” The animals are attracted to the scent of sycamore trees, which they take down with their chompers. “The constant felling of them,” the naturalist adds, “must be a real pain for the park landscapers.” —*Jeff Balke*

# WHAT LIES BENEATH

The city's greatest landmark, right under your nose.

GO

Rain runs thru  
June 4. \$8-10:  
3:30-7 Wed and Fri,  
10-7 Sat-Sun. Free:  
12:30-7 Thurs.  
Separate tours of  
the Cistern are  
available for \$5 on  
select days; call for  
more information.  
105 Sabine St.  
713-752-0314.  
buffalobayou.org

**THE NONDESCRIPT ENTRANCE** near The Water Works visitor center looks like a maintenance closet. If not for the line of people waiting outside the door, you'd probably miss the passageway into Houston's recently revitalized underground "ruin"—the Cistern.

Built in 1926, the 87,500-square-foot cavern was one of Houston's first drinking-water reservoirs, holding 15 million gallons. (The city now uses 500 million gallons daily). Decommissioned in 2007, the space was one step away from becoming a parking lot until the Partnership rediscovered the site.

"BBP is committed to historic preservation, so preserving the Cistern was very important to us," says organization president Anne Olson. "It is so unique; it just had to be saved."

After a minimally invasive \$1.2 million renovation, including the addition of an elevated sidewalk around its quarter-mile exterior, the reimagined reservoir opened to the public in May of last year. Tickets are \$5, and 40 people—the maximum let in at a time—typically walk through its snake-like concrete tunnel every half hour. As of November, nearly 16,000 visitors had taken a tour.

When it's your turn to venture down, the temperature quickly drops; then, the narrow passageway opens into a cathedral-like cavern of 221 two-story, symmetrical columns, reflected in a three-inch pool of water. It is vast, eerie and elegant, reminiscent of ancient Roman ruins, but a stone's throw from downtown rush hour.

The BBP plans to host periodic art exhibits here. The first, *Rain: Magdalena Fernández at the Houston Cistern*, a collaboration between BBP and the Museum of Fine Arts, is already open and runs through June. The installation projects a two-minute video by the Venezuelan-born artist into the vast space, set to a soundtrack by the a cappella Slovenian choir Perpetuum Jazzile, which is amplified by the Cistern's impressive 17-second echo. It looks and sounds like rain, a perfect fit for the previously water-filled space.

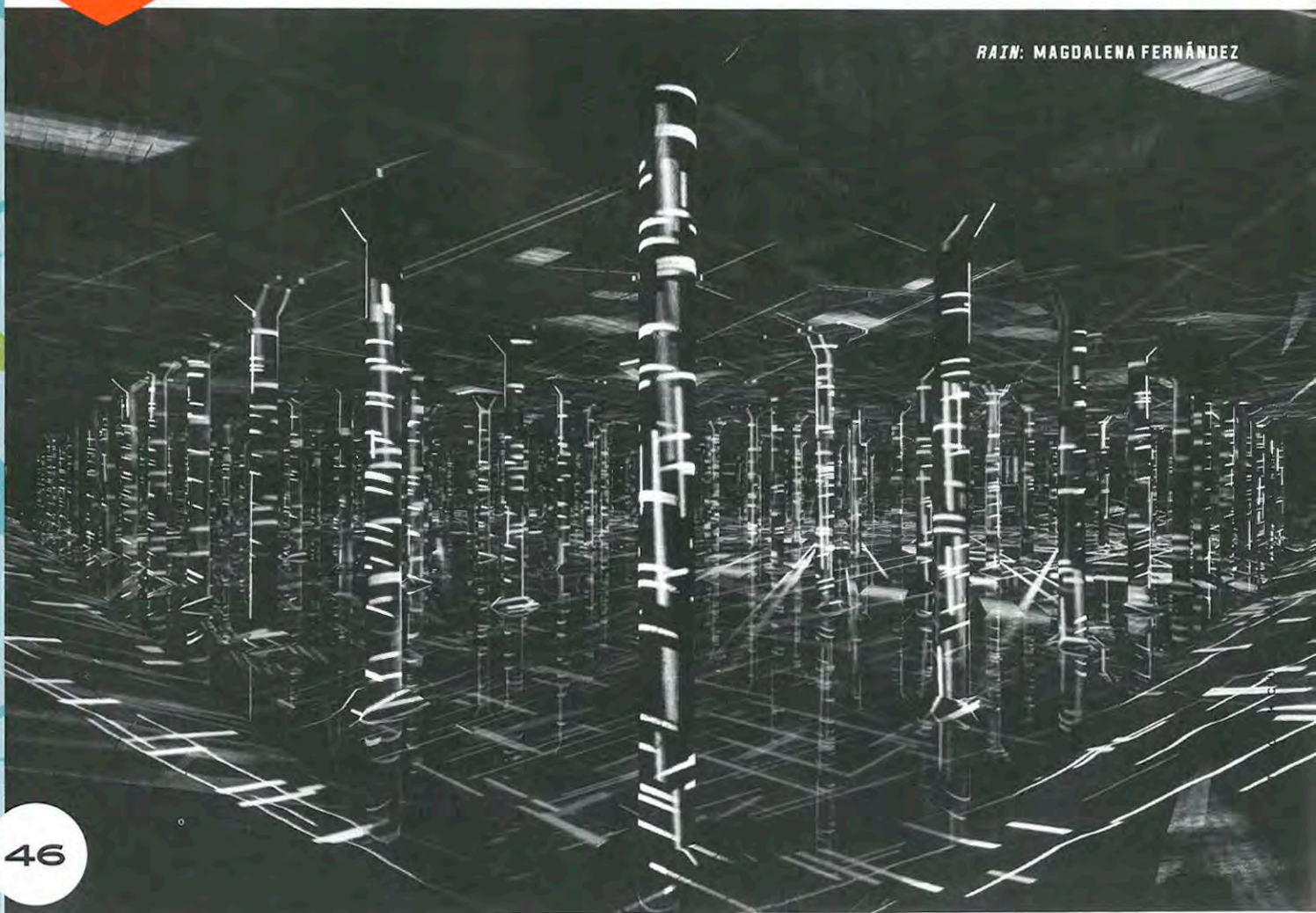
"I have been working with water since 1993; the drops and rain are paramount components of my research," says Fernández. "I couldn't have been happier when they asked me to install *Rain*. It is an extraordinary opportunity to re-enact a discussion on water within the Cistern."

—Jeanne Lyons Davis



RAIN: PETER MOLICK/COURTESY OF THE ARTIST AND SICARDI GALLERY

RAIN: MAGDALENA FERNÁNDEZ





THE WATER WORKS



THE BROWN FOUNDATION LAWN

**DID YOU KNOW?**

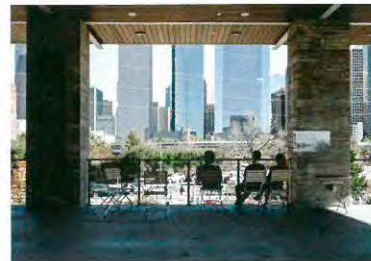
If you're blazing down a bike path, make sure it's paved concrete—not asphalt. The asphalt **Kinder Footpaths** are for pedestrians only. Stick to the **Sandy Reed Memorial Trails** or risk the wrath of startled joggers and the danger of getting your wheels wrapped up in a dog leash.



Best tucked-away reading spot



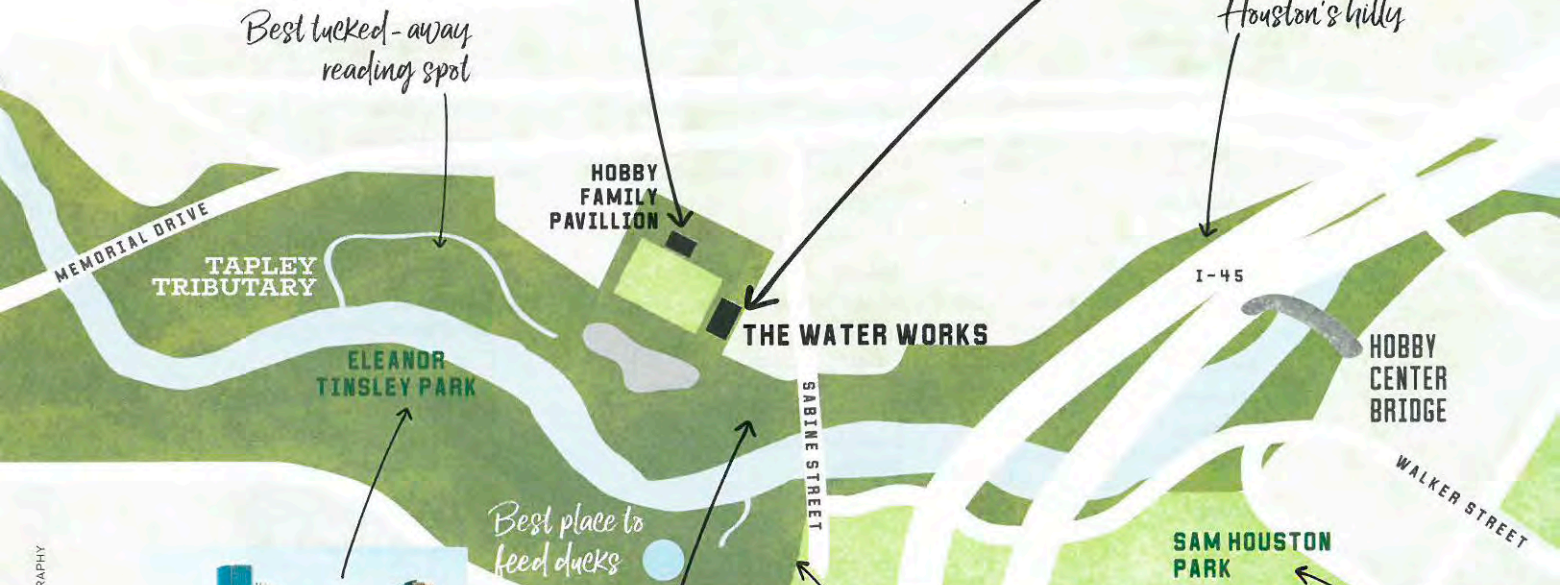
Best place to pretend you're a rockstar



Best place to take a Match.com date



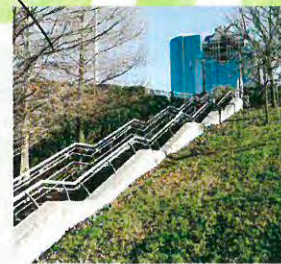
Best place to pretend Houston's hilly



Most dramatic views of skyline



Coollest Kid's area



Best stairs to run for Crossfit



Best spot for history buffs

# IT WASN'T ALWAYS A WALK IN THE PARK

Four folks who made it all happen, on their biggest challenges—and how they overcame them



## BRIDGING THE GAP

“Before the park was redeveloped, visitors would either have to commit to very long walks or face busy roadway bridges to cross over the bayou, limiting the value of the park. The pedestrian bridges now open the park up to more users—one of the key goals of the project.... Despite all the physical challenges and industrial-design materials, we wanted the bridges to reflect the natural beauty of the bayou. The warm color of the Corten steel matches the native vegetation, while the subtle arches in the bridges celebrate the crossing of water.”

—**Scott McCready**, *principal landscape architect, SWA Group*



## BUILDING SMART

“Floods are a way of life in Houston. The structures would have to sustain impact from logs and other debris that might rush down the bayou after a storm. This is not a normal condition for buildings, but these special circumstances led us to use strong board-formed concrete piers for the design. Also, Houston is often hot and humid. These additional challenges inspired the pavilions’ deep overhangs and light steel trellises to create comfortable shelter from the sun.”

—**Larry Speck**, *principal architect, Page, which designed the structures at Lost Lake and the Water Works*



## IT TAKES A VILLAGE

“It was a major undertaking, but thanks to great partnerships with the Kinder Foundation, Harris County Flood Control District and Houston Parks and Recreation Department, it came together beautifully. And with the support of more than 800 donors—from corporations to everyday citizens—more than \$58 million dollars was raised, showing how much Houstonians value, and have since embraced, the park.”

—**Anne Olson**, *president, Buffalo Bayou Partnership*

For information on registering to volunteer with BBP, head to [buffalobayou.org/get-involved/volunteer](http://buffalobayou.org/get-involved/volunteer)



## MANY HANDS ON DECK

“We have a team of 24 landscapers and maintenance personnel, responsible for 160 acres, doing everything from clearing debris from paths to cleaning after bats below the Waugh Street Bridge. The park is also filled with reforestation areas that have nearly 30 varieties of native plants. So instead of mowing, we have to manually pull weeds by hand. In the summertime, the weeds and vines get out of control, and so we also rely on the additional help of more than 3,000 volunteers.”

—**Gregg Burks**, *parks director, Buffalo Bayou Partnership*



ROSEMONT BRIDGE

## DID YOU KNOW?

That \$58 million renovation project paid for two of the park's new pedestrian bridges (the Memorial Heights TIRZ helped fund the others) and plenty of flood mitigation projects, but there's more to making a functional park than just footpaths. The renovation also included the installation of:



92

TRASHCANS



40

BIKE RACKS

38

BENCHES



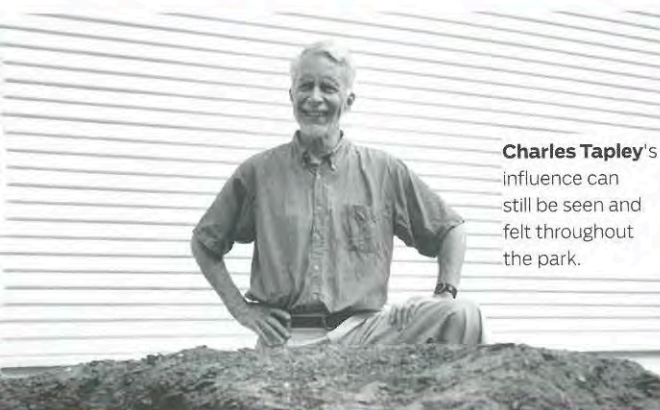
18

DRINKING  
FOUNTAINS  
for humans



6

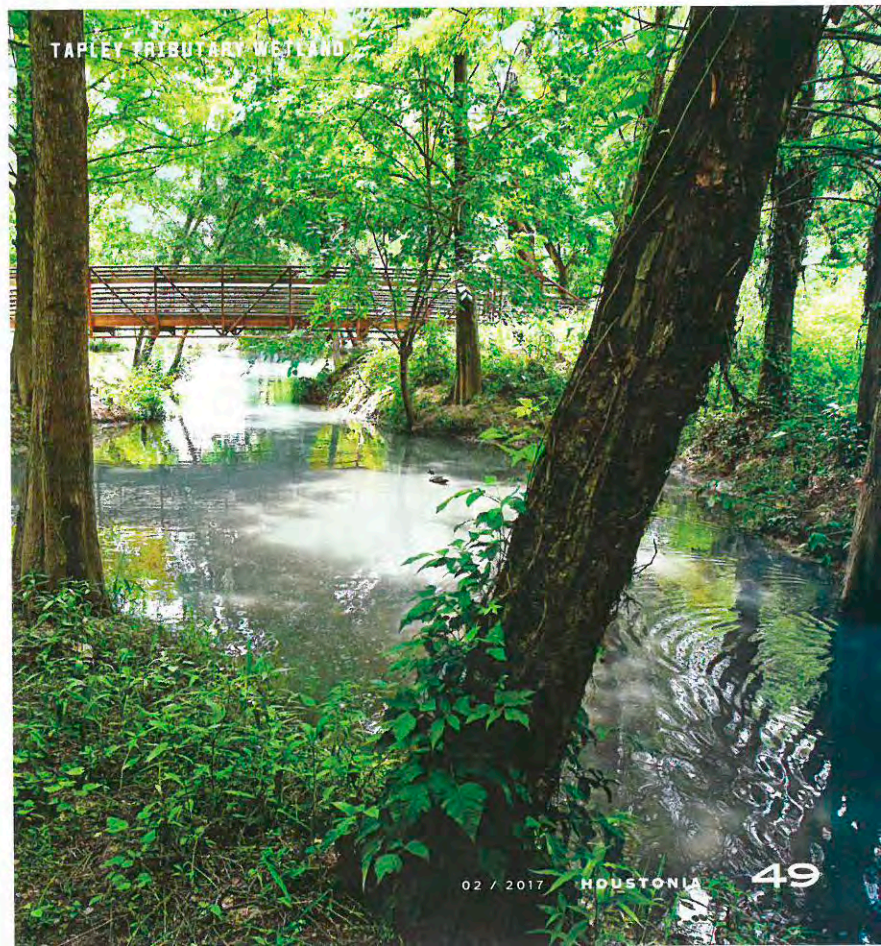
DRINKING  
FOUNTAINS  
for dogs



**Charles Tapley's** influence can still be seen and felt throughout the park.

The park as we know it might not exist without Houston landscape architect **CHARLES TAPLEY**, who developed the first master plan for Buffalo Bayou in 1974. With his guidance, the Partnership developed *Buffalo Bayou and Beyond*, the organization's own 20-year master plan, which eventually became Buffalo Bayou Park.

As part of Tapley's original vision, he created the innovative **TAPLEY TRIBUTARY** across the bayou from Eleanor Tinsley Park, with its trademark granite steps and circular cascade, which redirected rainwater through a newly constructed wetland meant to attract wildlife—a task it continues to accomplish to this day. —*KS*



TAPLEY TRIBUTARY WETLAND





# STOP. LOOK.

To find the hidden art within Buffalo Bayou Park, you'll need to pause for a moment.

**J**UST BENEATH the Sabine Street bridge overlook, in a perpetually shaded part of Buffalo Bayou Park, there is a small pond, separated from the bayou by the Brookfield Bridge and home to a talkative flock of ducks who will come honking up to one and all, hoping for food. Discovering the pond feels like finding a secret gem, but yet another hidden treasure lurks in the trees just west of the pond.

"PAUSE," reads a four-foot sculpture in all-caps serif letters, seeming to emerge as organically from the ground as the tree roots and scrubby grass surrounding it. It's just one of six word sculptures installed in the park by Houston artist Anthony Shumate in the summer of 2015, and one of many pieces of public art throughout the park (see below).

Today, with a couple seasons of weather on them, the sculptures seem even more endemic to their environment, encouraging park-goers to **EXPLORE, REFLECT, LISTEN, EMERGE** and **OBSERVE** as they spring up, say, around a bend on the Kinder Footpath, or at an unexpected perch above the bayou.

"Anthony's concept embraced the entire park," says BBP president Anne Olson. "His thoughtful pieces are intended to be discovered by park users as they explore everything Buffalo Bayou Park has to offer."

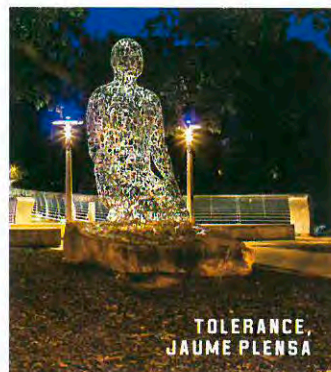
While we've given you a hint as to where you can find PAUSE, it could be tougher to track down the remaining five. Olson offers just one clue as to where all six sculptures are: *the entire park*. Can you find them all? —KS



LARGE SPINDLE PIECE, HENRY MOORE



PORTRAIT OF HOUSTON, JOHN RUNNELS



TOLERANCE, JAUME PLENSA

VISIT HOUSTON; KATYA HORNER AND JONNU SINGLETON AND G. LYON PHOTOGRAPHY/COURTESY BUFFALO BAYOU PARTNERSHIP





BICYCLING IN THE PARK

THE ULTIMATE  
GUIDE TO

**BUFFALO  
BAYOU PARK**

# TUNE IN

Buffalo Bayou Park

+ Houston Public Media =

**ONE EXCEPTIONAL AUDIO TOUR**

**B**UFFALO BAYOU PARK, in collaboration with the award-winning team at Houston Public Media, is offering a new walking tour that aims to teach listeners everything a real-life guide would—only with a handy pause button for those times you want to take out the earbuds and enjoy the sounds of cicadas in the city.

Download the 18-minute, 12-part audio tour—which, like the park itself, is completely free—and KUHF on-air personalities Ernie Manouse, Tom Carter, Al Ortiz and Catherine Lu will lead you through everything from the native wetland and woodland landscapes to an explanation of the “LUNAR CYCLE LIGHTING” along the trails.

To make the most out of your tour, start at the Brown Foundation Lawn (the big grassy area atop the Water Works off Sabine St., which offers a superb view of the downtown skyline just to the east) and let Manouse tell you about the park’s history. Then head west along with the tour, crossing the bayou to its south side at the Jackson Hill Bridge to make sure you cross off everything on your list. Finish up at Eleanor Tinsley Park for one more postcard snapshot of downtown. It’s the perfect spot for a post-walk picnic. —*KB*

## DOWNLOAD

the entire audio tour in English or Spanish at [buffalobayou.org/audio-tours](http://buffalobayou.org/audio-tours).



Ever wondered why the trails are illuminated a vivid blue some nights, and a bright white on others? That’s the park’s lunar-cycle lighting in action, which syncs the colors of the trails with the phases of the moon. They’re blue during the waning phases but grow brighter and whiter as the moon waxes full, deepening back to blue as the moon wanes once again. It’s just one more subtle way the park hopes to draw visitors’ attention to the natural cycles taking place all around them on a daily basis—whether they notice them or not.

# COMING 'ROUND THE BEND

What's ahead for Buffalo Bayou, east of Allen's Landing

**T**HINK THE BUFFALO BAYOU Partnership's work is done? Not even close. They're already hard at work on the next leg of redevelopment, in an area currently called the East Sector: the 10-mile stretch along the bayou east of Allen's Landing, all the way out to the Port of Houston Turning Basin. But don't expect more of the same.

"Unlike Buffalo Bayou Park, where there was already a park, the infrastructure isn't there," says Anne Olson, the Partnership's president. "It's a post-industrial landscape. We own some pretty interesting sites out there, and all of these sites are staying as-is—we don't plan to tear anything down. We want to highlight the industrial heritage of the area."

Olson stresses that this is a "multi-generational plan"—think 20 to 30 years—as the Partnership is still in the process of acquiring land to connect all the hike-and-bike trails, as well as hiring an architect to make a detailed plan for some of the spots along the way. They're also appealing to community leaders in the Fifth Ward and the East End to help them come up with a plan that will make the bayou well-used and -loved by the community.



ALLEN'S LANDING

"We're focused on connecting the neighborhoods to the bayou, both the historically black Fifth Ward and the largely Hispanic East End," she says. "The neighborhoods around Buffalo Bayou Park were pretty much developed. In the East Sector, these neighborhoods are still in development, so they will play a bigger part in our plans. We're cognizant of the gentrification happening, and we want to make sure and bring the older residents along." —RA



Unrecognizable: Allen's Landing was a commercial hub in 1910.

## LAND HO!

What's the big deal about Allen's Landing, anyway?

You may have heard this spot described as Houston's own Plymouth Rock. While that's a little hyperbolic (there's not even a rock!), it is the place where the city's founders, John Kirby Allen and Augustus Chapman Allen, established the city's first port in 1837. Here, steamers like the *Laura* (the first boat to dock in Houston) once came through, bringing the growing town everything from sugar to sheep.

When the *Laura* arrived here in January 1837, her crew found the bayou congested with branches and the nascent city woefully small, with only 12 residents. Meanwhile, Galveston, with its much larger port downstream, already had two newspapers, the largest population in Texas and exports to foreign countries in excess of \$1 million by 1840.

But thanks in part to Allen's Landing, Houston would eventually catch up: By 1930, the Bayou City had three newspapers, the largest population in the state and \$4 million of yearly foreign tonnage overseen by a brand-new Port Bureau, which had expanded the port and cleared out all those branches. Today, the 25-mile-long Port of Houston is the busiest in the U.S. for foreign tonnage, moving a record-setting 2 million containers in 2015 alone—and it all started here.

### ON THE HORIZON

If you love The Dunlavy, wait until **THE SUNSET CAFÉ** opens later this year. Housed in the historic **SUNSET COFFEE BUILDING** at ALLEN'S LANDING, this casual coffee shop will feature a balcony overlooking Buffalo Bayou and, like The Dunlavy, host private events in the evenings. But that's not all. You'll also be able to rent out its plant-covered Rooftop Plaza—did someone say "rehearsal dinner," or maybe "office holiday party"?—which offers a stunning 360-degree view of downtown from the very spot where Houston first became a city.