

Holly Shores/ Edward Rendon Sr. at Festival Beach

Master Plan

Austin Texas

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A Master Plan for Holly Shores

Figure 1.
The Master Plan Site

In February of 2012 the City of Austin, through its Contract and Land Management Department and Parks and Recreation Department (PARC), hired a multi-disciplinary team lead by the nationally recognized firm, Michael Van Valkenburgh Associates, Inc., Landscape Architects of

Cambridge MA and Brooklyn, NY (MVVA) to prepare a Park Improvement Master Plan for Holly Shores/Edward Rendon Sr. at Festival Beach.

The site is an area of parkland along the north shore of Lady Bird Lake from I-35 east to Pleasant Valley Road and south of Canterbury



Street, including approximately 9.3 acres of newly dedicated parkland at the site of the Holly Street Power Plant as well as approximately 91 acres of existing parkland.

From the early summer of 2012 to the summer of 2014, MVVA worked with the

communities of the surrounding neighborhoods, city staff, and stakeholders to create a plan to generate public interest, support, and funding for the future development and improvement of this unique neighborhood park.



Existing Conditions Plan



Figure 2.
Existing Conditions
Plan

- Legend**
1. Parking Below I-33
 2. Ramp and Pedestrian Footpath Connection to I-33
 3. Shade Trees and Lawns
 4. Nash Hernandez Building
 5. Community Gardens
 6. Parking
 7. Boat Launch
 8. Johnny Degollado Pavilion
 9. Fiesta Gardens
 10. Playground
 11. Ball Field
 12. Pedestrian and Cycle Trails
 13. Future Boardwalk
 14. Concessions





Master Plan

Master Plan Locations of Project Elements are Conceptual and Subject to Change Based on Engineering, Permitting, and Design Development



Austin Energy Substation

Legend:

1. Plaza and Fishing Pier Below 135
2. 5% Max Sloped Footbridge and Connection to 135
3. ADA Accessible Paths
4. Retain Existing Shade Trees and Lawns
5. 8' Wide Decomposed Granite Pedestrian Trail
6. 11' Wide Asphalt Bicycle Trail
7. Nash Hernandez Building
8. Food Forest
9. Enhance Existing Park Facilities
10. Existing Parking
11. Enhance Lake Edge Habitat
12. New Lake Channels
13. Boat Launch
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15. Retain Existing Johnny Degallado Pavilion Location
16. Sloped Lawn
17. Opened and Enhanced Fiesta Gardens for Community Use
18. Children's Playground
19. Picnic Garden
20. Concessions
21. Viewpoint
22. Possible Future Connection
23. Covered Basketball Court
24. Pedestrian, Bicycle, and Service Connection (Riverview Extension)
25. Pedestrian, Bicycle, and Service Connection (Holly Street Extension)
26. Pedestrian, Bicycle, and Service Connection (Pedernales Street Extension)
27. Steps and Deck
28. Repurposed Warehouses for Community Use
29. Pier
30. Enhance Existing Park Facilities
31. Ball Fields
32. Wetland Habitat Islands
33. Widen Existing Bridge
34. Pedestrian and Cycle Improvements
35. Existing Boardwalk
36. Existing Community Gardens

Figure 3. Master Plan



A Walk Through the Park

The park is a large and complex series of landscapes, with a diversity of uses and characters. Many of the neighbors and stakeholders involved in the master planning process were intimately knowledgeable about the site, and many had personal insights, observations, and information that were of great value to the discussions and ideas as they developed.

The MVVA team began its process by a document review and carrying out its own close reading of the site through a walking, photographic and experiential survey. The information gathered was presented at the first Town Hall Meeting so that all involved would start with a mutual understanding of the site, and the attendees could share personal anecdotes and observations about the park. Through these discussions it became clear that the park was a well loved, well used, and highly valued neighborhood park. The conversations centered around how to preserve all that was good about the park, while recognizing its shortcomings and working on targeted solutions to improve what was there rather than create something entirely new.



START

FINISH

East Park

West Park

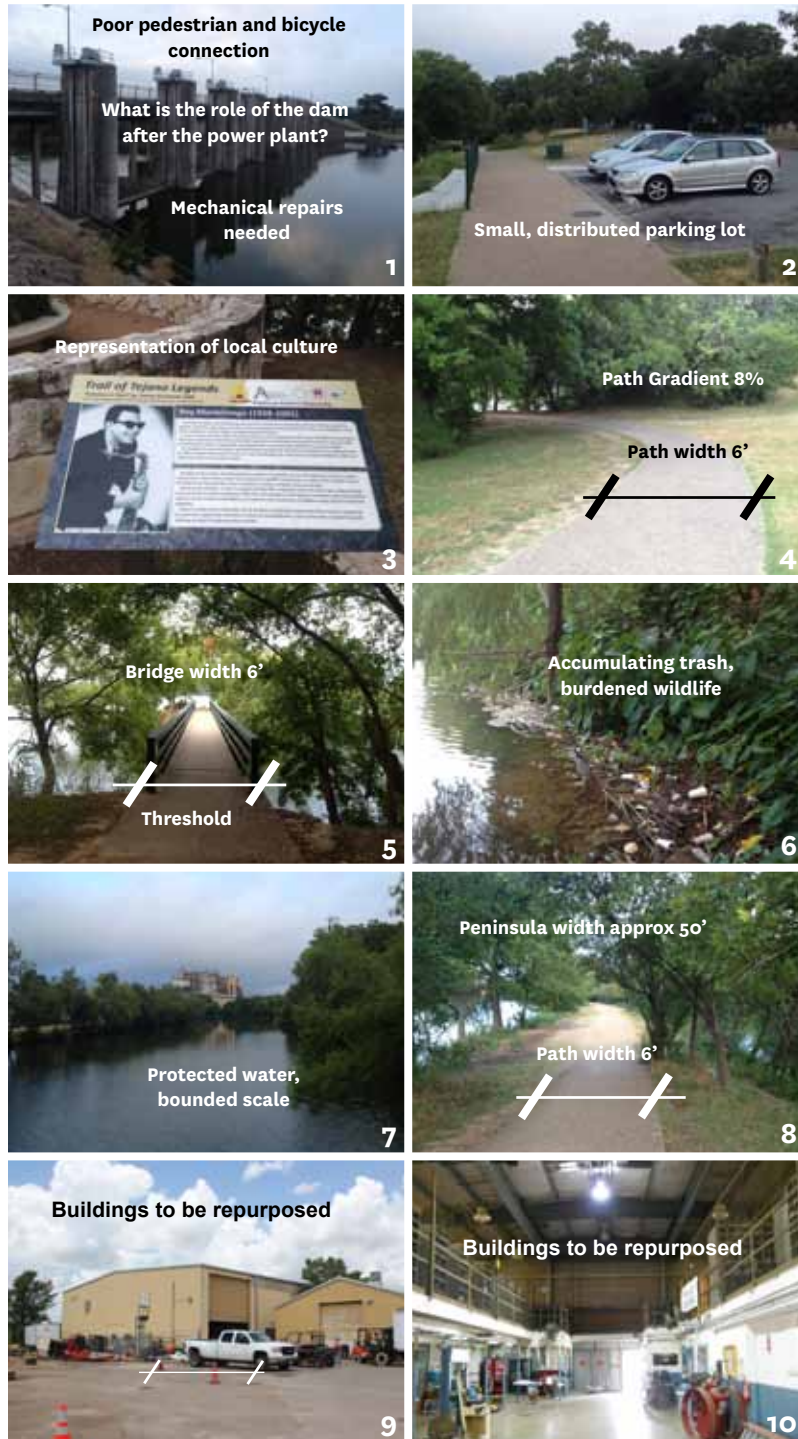
Metz Park

Festival Beach

Ball Fields

Figure X.
East Park walking route
and park areas

East Park



The East Park is one of the most tranquil areas of the master plan study area and one of the richest in habitat value, however it is poorly connected to the rest of the park land and is the point at which the Holly Plant currently interrupts the lake side trail.

Starting at the Longhorn Dam (1), the current pedestrian sidewalk is narrow and uninviting, with a low guardrail increasing the sense of insecurity. Walking west from the dam the footpath descends the slope into the park at 8%, steeper than allowed by ADA standards (2,4). Informative signs honoring the Trail of Tejano Legends introduce the park (3), as does the footbridge crossing onto the Cooling Pond peninsula (5). At 6' wide, this bridge is too narrow to safely accommodate pedestrians and bicycles.

Walking along the peninsula

Figure 5.
East Park Existing Conditions
Observations

with Lady Bird Lake on one side and the Cooling Pond on the other is a dramatic experience, with long-range views across the water and close proximity to rich habitat. Many species of birds can be seen here, and one can feel disconnected from the city for a

short while (7,8). The water quality in the Cooling Pond is poor, as it is disconnected from the main lake flow and receives significant discharge from the city stormwater system. Floating trash accumulates on the northern bank in large quantities (6).

7



Turning south from the peninsula the lake side trail is currently blocked by the Holly Plant, but within the Plant are several structures and buildings which have the potential to be repurposed as park amenities, including two steel-framed storage buildings near the lake edge (9,10) and the cooling water intake and outfall structures from the plant (11,12), which suggest re-use as park amenities right on the lake edge.

The views from the Holly Plant land across Lady Bird Lake are more expansive and tranquil than almost anywhere else on the lake (13).

Figure 6.
East Park Walking
Route and Views

Figure 7.
East Park Existing
Conditions Observations



Metz Park

Metz Park is a long established and important focus of neighborhood activity. The Metz Recreation Center has offered a wide range of youth, adult and community programs since 1972, and the park itself has recreational facilities, including a pool, well used by the community.

At the moment the Holly Plant is an obstruction between Metz Park and Holly Shores, with poor pedestrian connections, and an isolated “back side” feeling to the connections. (1,2,3,4). The park has a very intimate character and several artworks express the creativity and culture of the neighborhood (5,10).

Recreational facilities are in moderate condition and are very well used, including covered basketball courts, a playground for young children, and swimming pool (6,7,11).

The temporary parking lot at the Metz Recreation Center is planned to be reestablished as a children’s ball field once the Holly Plant decommissioning process is complete (9), and this parking lot is well used by the programs at the Rec Center (8).

The streets around Metz Park are quiet and residential in character, making a safe environment for children walking to and from the park (12). The

Figure 8.
Metz Park Existing Conditions
Observations



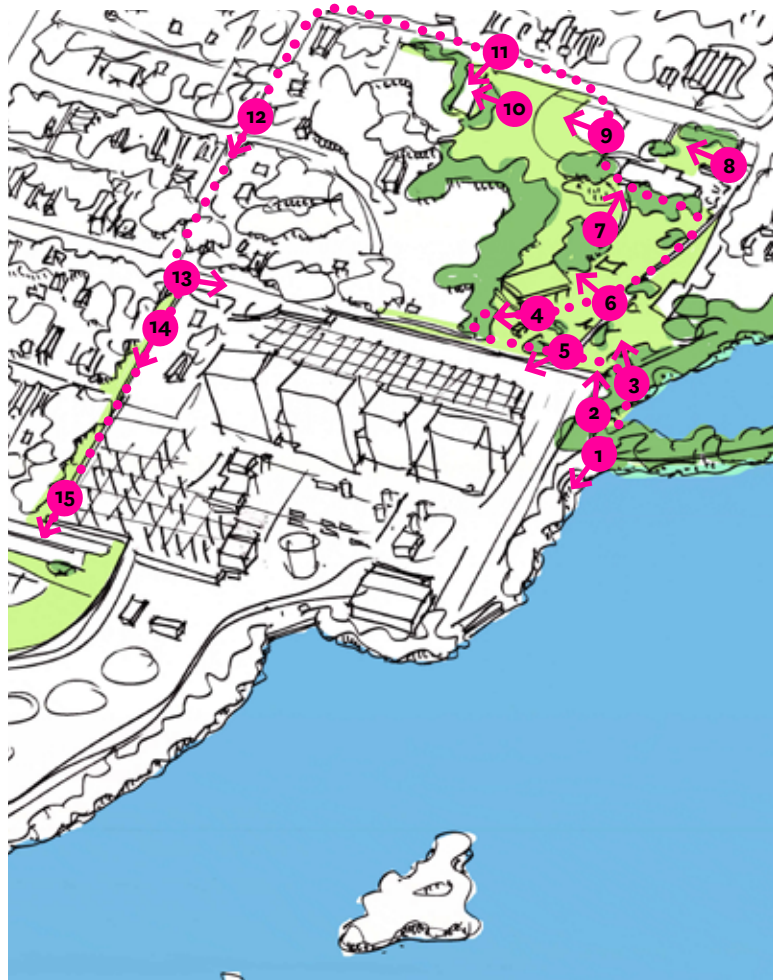


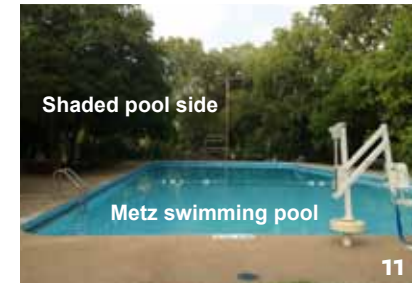
Figure 9.
Metz Park Walking
Route and Views

perimeter wall of the Holly Plant cuts across Holly Street, making a barrier to access along the southern edge of Metz Park, a situation exacerbated by the lack of sidewalk on the north side of Holly Street (13). Opening up this connection to pedestrians and bicycles would better integrate Metz Park with the neighborhood to the west.

On the western boundary of

the Holly Plant a pedestrian footpath connects Riverview and Holly Streets, and it is marked with public artwork at both ends (14,15). This connection is adequate, but it is the one point where the trails around Lady Bird Lake are diverted from the lake edge and routed around the back side of the plant, a situation that will be vastly improved by the decommissioning.

Figure 10.
Metz Neighborhood
Existing Conditions



Ball Fields



The ball fields west of the Holly Plant are a heavily used area of the park and an important part of the recreational program at Holly Shores. Many people walk or bicycle to the ball fields and there is a parking lot on Riverview Street, which is currently blocked by the Holly Plant, a condition that will change as part of the plant decommissioning (1).

The ball fields and surrounding landscape are under intense pressure by high levels of use. The support infrastructure including fences, lighting, shade structures, rest rooms, water fountains, buildings and pathways are in need of improvement or replacement (2-6).

The ball fields are in the Holly Shore park lands, but, with the exception of isolated areas (6), are not supported

Figure 11.
Ball Fields Existing
Conditions Observations

by a park landscape of shade trees, lawns and planting that would create a more comfortable area and a more integrated feeling with the rest of the park. As the parklands are created on the Holly Plant site, the opportunities to integrate this area with the rest of the park will improve (9,10).

The Lorraine “Grandma” Camacho Activity Center is a key facility in this part of the park, providing year round activities, events and classes for children and adults (8). The Camacho Center will be an important center of activity as the park improvements are made.

This part of the park has rich

habitat at the lake edge, although the current Holly Plant prevents the trails from connecting to areas to the east, and the trails turn inland. The lack of connectivity here creates a feeling of isolation, plantings have been allowed to become overgrown, and parts of the landscape can feel unsafe. There are occasionally expansive views over the lake, illustrating the great potential of this area to be a tranquil, yet welcoming part of the park in the future. The opportunities here are particularly exciting (11-15).



Figure 12.
Ball Fields Walking
Route and Views

Figure 13.
East Lakeside Existing
Conditions Observations



Festival Beach

In many ways Festival Beach is the center of the Holly Shores park lands. The buildings and outdoor spaces of Fiesta Gardens have long been a focus of neighborhood activity, and for several blocks homes share a common border with the park. These are often within earshot of the heavily used park amenities.

Fiesta Gardens is currently surrounded by a high fences with locked gates, creating an unwelcoming edge along Jesse E. Segovia Street, where the neighborhood most directly engages the park (1,2). The facilities at Fiesta Gardens can be rented for parties and events, including a 4,000sf. room and outdoor patio, which has little shade. The facilities represent an important aspect of neighborhood history, but are in need



Figure 14.
Festival Beach Existing
Conditions Observations



Figure 15.
Festival Beach Walking
Route and Views

is currently behind high fences, which restricts public use of the park on non-event days (9), and general renovations are needed to the facilities (11). Views to the lagoon are obscured by overgrown vegetation (10), and there is currently no ADA accessible route to the lagoon from Fiesta Gardens.

Walking around the lagoon to the edge of Lady Bird Lake a small boat ramp and parking area provide access to the lake (13), and a footbridge connects back to the ball field area (14). The water quality in the lagoon is poor, as it is disconnected from the general flow of the lake, and the overgrown planting and steep slopes make the lagoon feel somewhat isolated from the rest of the park. The sheltered water and central location give the lagoon great potential to become a more welcoming center to the park (15).

of renovation (3,4,5). Fiesta Gardens has good views over the sheltered lagoon (6). The City of Austin Parks and Recreation Department (PARC) currently uses part of Fiesta Gardens as administrative offices and a maintenance yard, which restricts public use and access to this

facility (7,8).

Further to the west, the Johnny Degollado Pavilion hosts a series of popular events throughout the year, including Pachanga Fest, which draw large crowds and generate noise and traffic (12). The area around the pavilion

Figure 15.
Festival Beach Existing
Conditions Observations



West Park

The West Park is pastoral and peaceful in character, with large shade trees, lawns and meandering paths, making it a popular family picnicking spot. It is the area in the park that most people think of when they talk about the relaxing neighborhood character of Holly Shores.

Martin Park is a focal point of this area, with picnic tables, shade structures, a playground and very popular swimming pool. The facilities at Martin Park need renovation, with more shade being a priority, and better integration of parking lots with the wider landscape would make the landscape a more pleasant place to be (4). The proximity of the park to the Martin Middle School is an opportunity for outdoor educational program that should be explored (5).

Running through West Park, Nash Hernandez Sr. Road is very wide and

has no sidewalks for most of its length, making it a significant impediment to park use and pedestrian circulation (6). However, the area between the road and the lake has diverse planting of flowering and shade trees, creating a series of attractive spaces ideal for family picnics and passive recreation (7,8). At the western end of the park, the Festival Beach Community Gardens are popular and well maintained (9).

The West Park does not have a complete network of ADA accessible pathways, particularly important given the proximity of the RBJ Center (10,11), and the condition of the lake edge habitat, lawns, and park amenities including furniture, water fountains and lighting need renovation (11-14). The Nash Hernandez building, owned by the City of Austin, is currently under renovation (15).

Figure 16.
West Park Existing Conditions
Observations





Figure 18.
West Park Walking
Route and Views

Figure 17.
West Park Existing
Conditions Observations

Community Priorities

(Public Engagement Process)

Between August 2012 and July 2014, the MVVA team and PARD engaged the neighboring communities through a series of public meetings and outreach efforts designed to find the priorities of as wide a constituency as possible. The process included five Community Workshops, eight smaller focus group sessions targeting local leaders, youth and seniors (platicas), meetings-in-a-box exercises, youth oriented events, exhibits at public venues, updates to interested stakeholders, outreach at community events, emails, mail, banners, and a project website.

Interest in the project was extraordinarily high, demonstrating the importance of this area to the community. There was a wide range in the opinions expressed, but through an iterative process, in which the team made constant adjustments, a broad consensus of priorities was reached.





The MVVA team established a methodology in the five Community Workshops that was designed to give people a level of comfort and familiarity with the process, and so encourage them to contribute ideas and opinions. At the first meeting the site was presented to the group as “A Walk Through the Park”, through a series of slides and analytical observations. The idea was to start everyone with an in-depth appreciation for what is there already, and to communicate the diversity of character and uses in the different parts of the park.

Following this introduction the team invited participants to post comments directly on an oversized aerial print of the park (see facing page). Gathering around the large table and writing notes together engendered a positive group energy, which was reinforced by inviting everyone to explain one of the comments they had posted to the whole group.

At the second meeting, the team presented early sketch ideas on a large plan and invited participants to post comments in a similar way to the first meeting, this was developed into a first draft plan at the third meeting, and a final draft plan at the fourth meeting. A fifth meeting was held in July 2014 to present

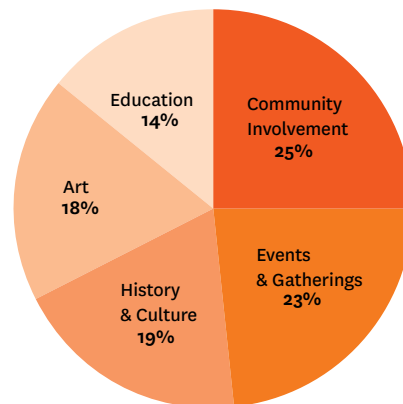
a series of eight minor modifications to the plan. At each step the team recorded and organized the comments received into five broad categories that would make them easy to compare with each other and discuss.

In all, 857 comments were collected in this way giving the team

robust guidance and a rich resource of ideas as it developed the Master Plan. Refining the ideas and priorities through a series of iterative exercises gave people the opportunity to think deeply about the issues, to maybe change their minds, and to engage in a real dialog with the MVVA team.



Heritage, Culture, and Community-
170 Comments



Access, Connectivity, and Safety-
118 Comments

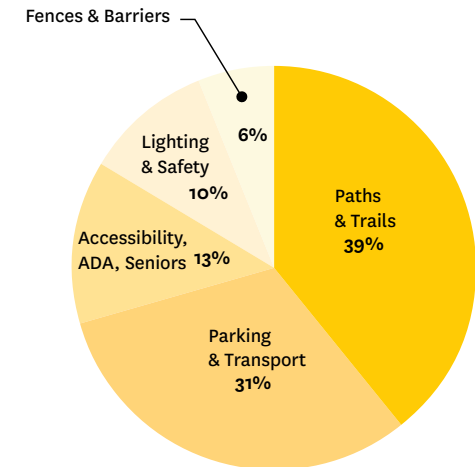
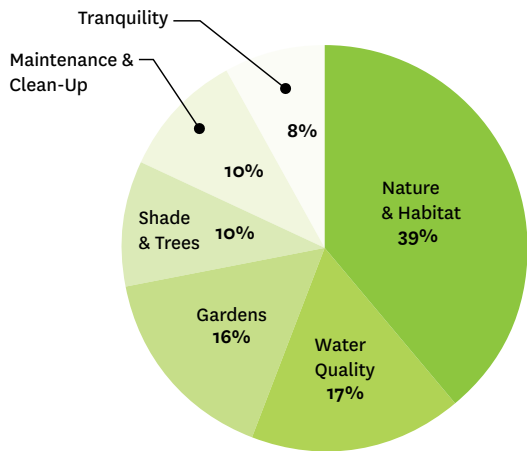




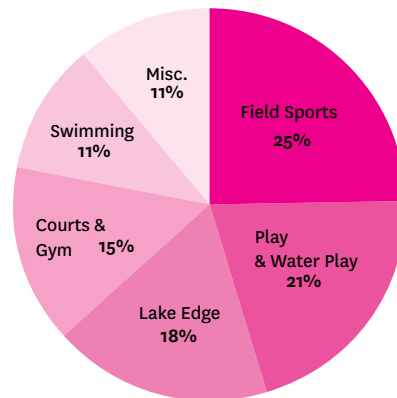
Figure 18.
Community Comments Map

Figure 19.
Community Comments
Compiled and Organized
by Subject

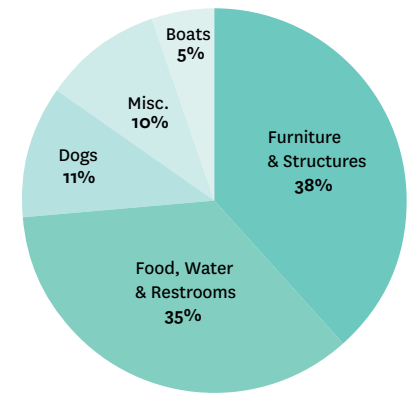
Landscape Character, and Environment- 243 Comments



Recreation and Sports- 196 Comments



Park Uses and Amenities- 130 Comments



The priorities centered around Heritage, Culture and Community largely concerned the wish that Holly Shores remain a neighborhood park, both in the process through which it is developed and in the way that it is used. Active events and gatherings based around family and the community were important, as was a communication of the history and culture of the community. The priority was loud and clear: “this is our park and we want to celebrate that.”

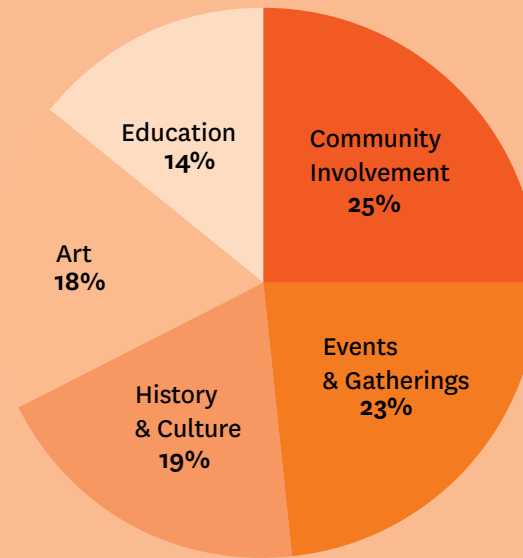


Figure 20.
Categorization of
Comments, Heritage,
Culture and Community

170 comments

- Maintain community involvement beyond the master plan
- Celebrate the heritage, culture and diversity of the community
- Include the work of local artists
- Events should fit the neighborhood park character in scale and type
- Provide a range of opportunities for family and community gatherings
- Improve learning opportunities and connections to schools and community centers



Heritage, Culture, & Community

The most frequently suggested physical improvements were the most simple. In the category of Access, Connectivity and Safety people wanted to see a connected network of better trails and paths, better access to the park, particularly from the neighborhood for people coming on foot, by bike or in cars, better accessibility for seniors and those with disabilities, and improved lighting and safety. Generally people wanted to see these improvements made early, before some of the more ambitious improvements were implemented.

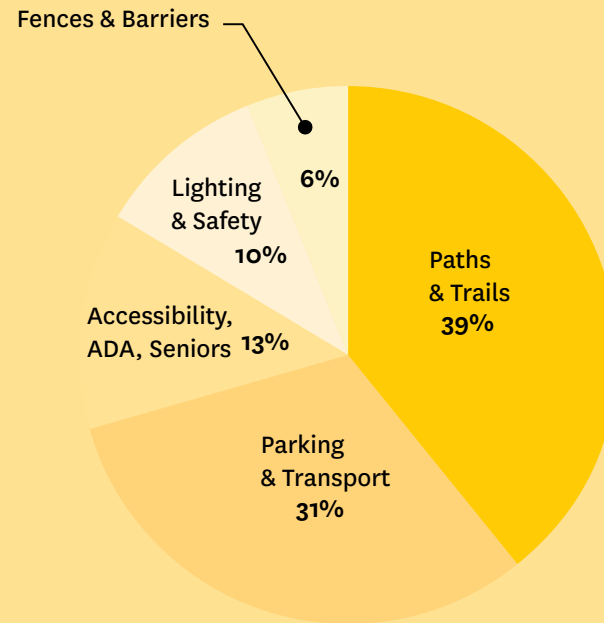


Figure 21. Categorization of Comments, Access, Connectivity and Safety

118 comments

- Improve accessibility for everyone, particularly seniors
- Remove fences that separate park amenities from the neighborhood
- Extend trail and sidewalk networks into the neighborhood and around the lake
- Better pedestrian and bicycle connections across lake
- Improve lighting, install 911 phones for safety
- Ease neighborhood parking pressures without large parking lots



Access, Connectivity,
& Safety

In keeping with the pastoral and relaxed character of the park and its close relationship with Lady Bird Lake, many people wanted to put strong emphasis on nature, habitat creation and improvements to water quality in the park. Other comments in this category concerned the creation of gardens, the planting of shade trees, and park maintenance. The high number of comments in this category demonstrate the importance of keeping the natural environment at the forefront of any park improvements.

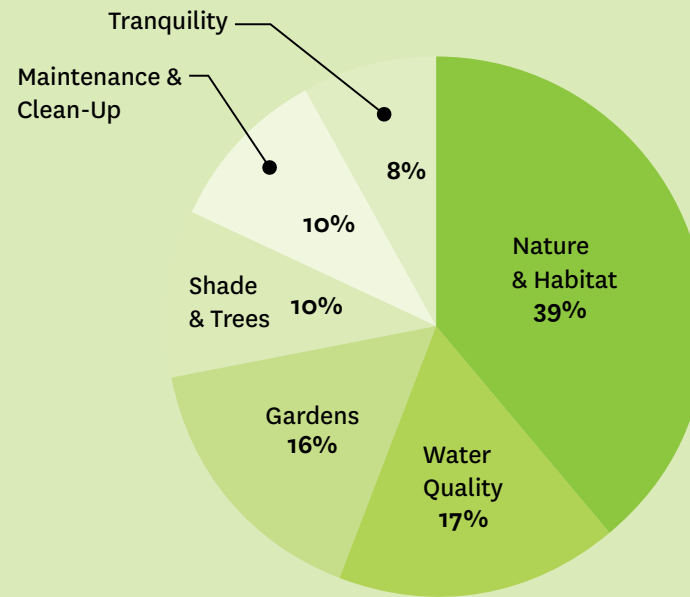


Figure 22. Categorization of Comments, Landscape Character and Environment

243 comments

- Increase comfort with shade, both trees and shade structures
- Clean up and improve maintenance throughout the park
- Increase natural habitat, particularly bird habitat around the lake
- Maintain simplicity and neighborhood character of the park
- Improve lagoon water quality



**Landscape Character
& Environment**

The majority of the comments in this category concerning field sports and active recreation were calling for improvements to the existing ball fields towards the eastern end of the park. There was considerable interest in improving playgrounds, water play areas, and swimming pools, and for recreation at the lake edge. In general the comments were quite specific, advocating for focused improvements rather than a fundamental change in the way recreation is distributed in the park.

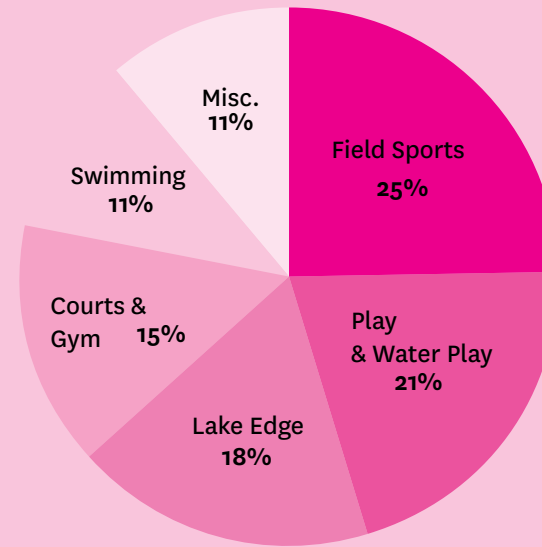


Figure 23.
Categorization of Comments,
Recreation and Sport

196 comments

- Improve quality and aesthetics of playgrounds and water play areas
- Provide safe water access points for a variety of uses
- Create a focus of recreational activities around the lagoon and Fiesta Gardens
- Improve the ball fields and integrate with the park landscape
- Improve existing swimming pools, provide shade and better rest rooms
- Maintain areas of passive recreation, particularly in the western park area



Recreation & Sports

The comments around the subject of Park Uses and Amenities focused on park comfort, places to sit, shaded places, and improved furniture of all types. Across the whole park area there was a desire for more water fountains, rest rooms and other facilities to support park use. There were strong opinions for and against the creation of a dog park, but on balance the group decided it was not needed.

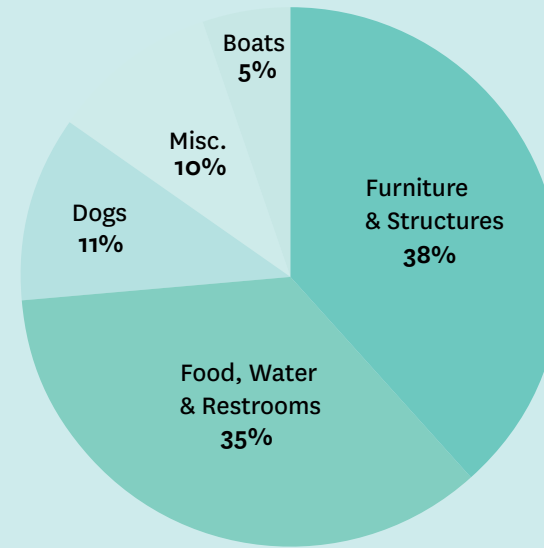


Figure 24.
Categorization of Comments,
Park Uses and Amenities

130 comments

- Improve furniture, more places to sit, particularly in the shade
- Provide plenty of drinking fountains, rest rooms, and park facilities
- Only allow non-motorized boats in the lagoon and lake
- Provide community-based uses in park buildings
- Create sustainable planting areas and activities related to sustainable and edible landscapes.

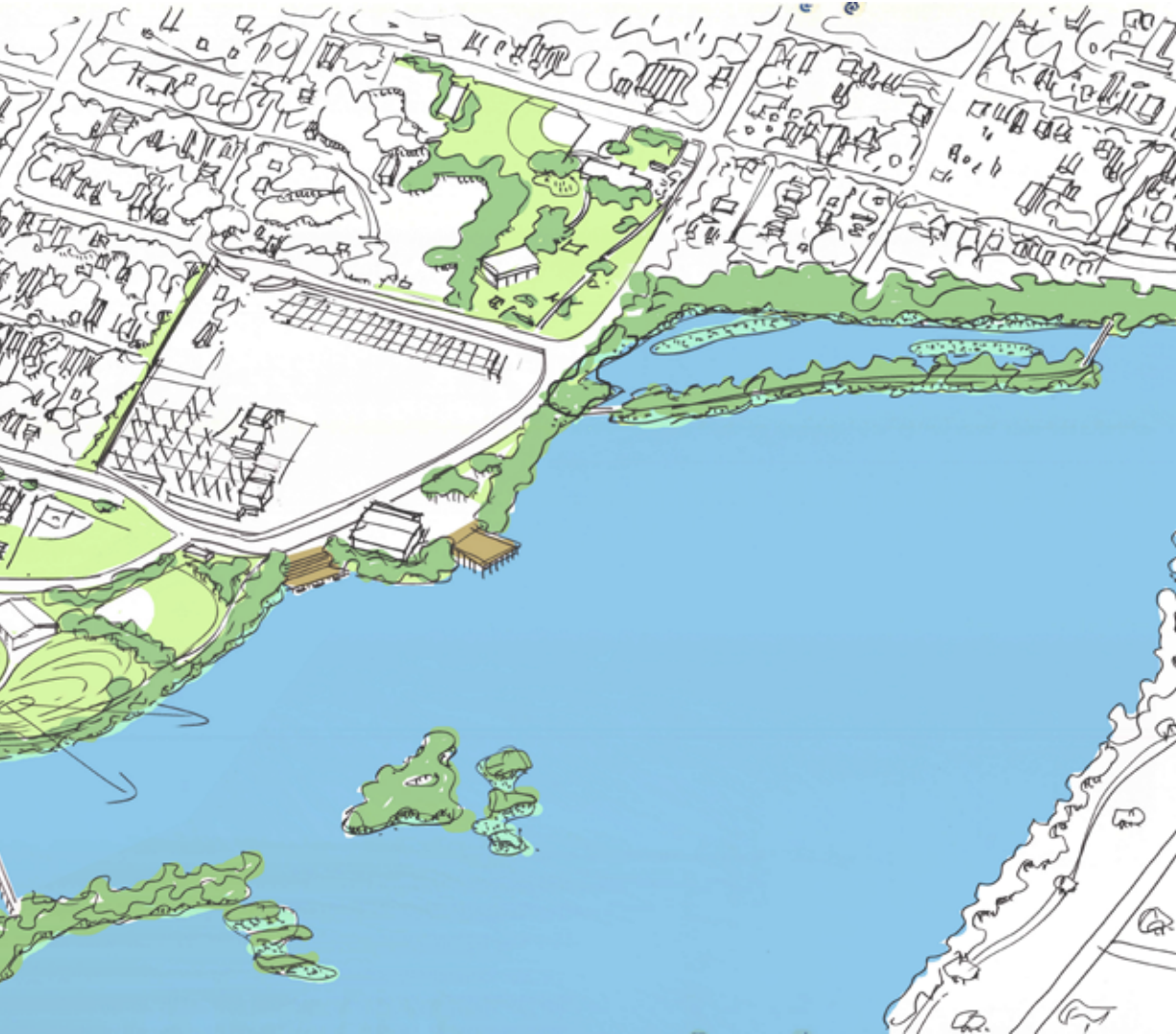


Park Uses
& Amenities



Figure 25.
Aerial sketch view showing
preliminary master plan
concepts

Master Plan Goals



The master plan goals emerged out of a robust and open community process and represent many voices and opinions. The over-arching call was for this place to remain first and foremost a neighborhood park, and many of the goals stemming from that are concerned with better connectivity, openness and integration between the various park elements, so that the park itself will continue to encourage connectivity within the community.

Beyond that, an emphasis on the natural environment, a tranquil and pastoral character, and park comfort will make Holly Shores an even better place to find a moment of respite from the stresses of city life.

- 1. Maintain neighborhood park character, while improving amenities, comfort and maintenance.**
- 2. Align with 1989 Town Lake Comprehensive Plan.**
- 3. Improve path and trail connections around the Austin Energy property.**
- 4. Integrate ball fields with the wider park landscape.**
- 5. Improve lagoon water quality and open to surrounding landscape.**
- 6. Reuse existing buildings for community-based program as a focus of park activity.**
- 7. Improve pedestrian and bicycle accessibility and connectivity.**
- 8. Maintain the simple, tranquil character of the West Park.**
- 9. Preserve and enhance tree canopy and wildlife habitat.**
- 10. Celebrate local art and heritage throughout the park.**



Maintain the neighborhood park character, while improving amenities, comfort and maintenance



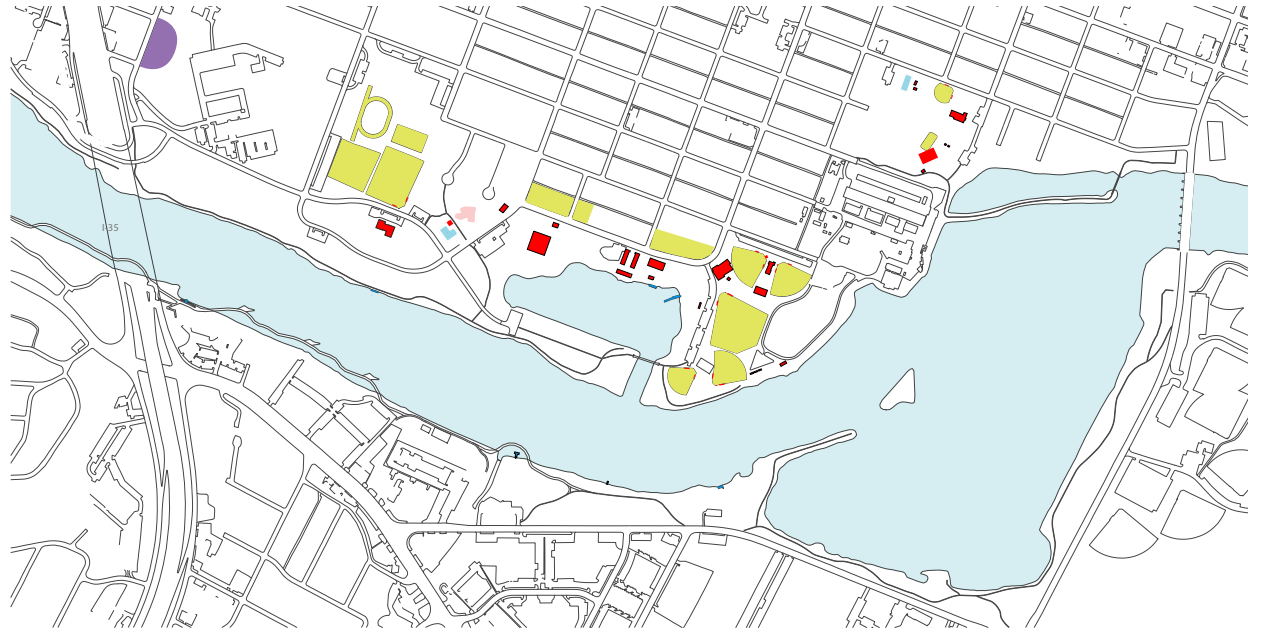
Legend:

1. Plaza and Fishing Pier Below 135
2. 5% Max Sloped Footbridge and Connection to 135
3. ADA Accessible Paths
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32. Wetland Habitat Islands
33. Widen Existing Bridge
34. Pedestrian and Cycle Improvements
35. Existing Boardwalk
36. Existing Community Gardens

Figure 26. Illustrative Master Plan

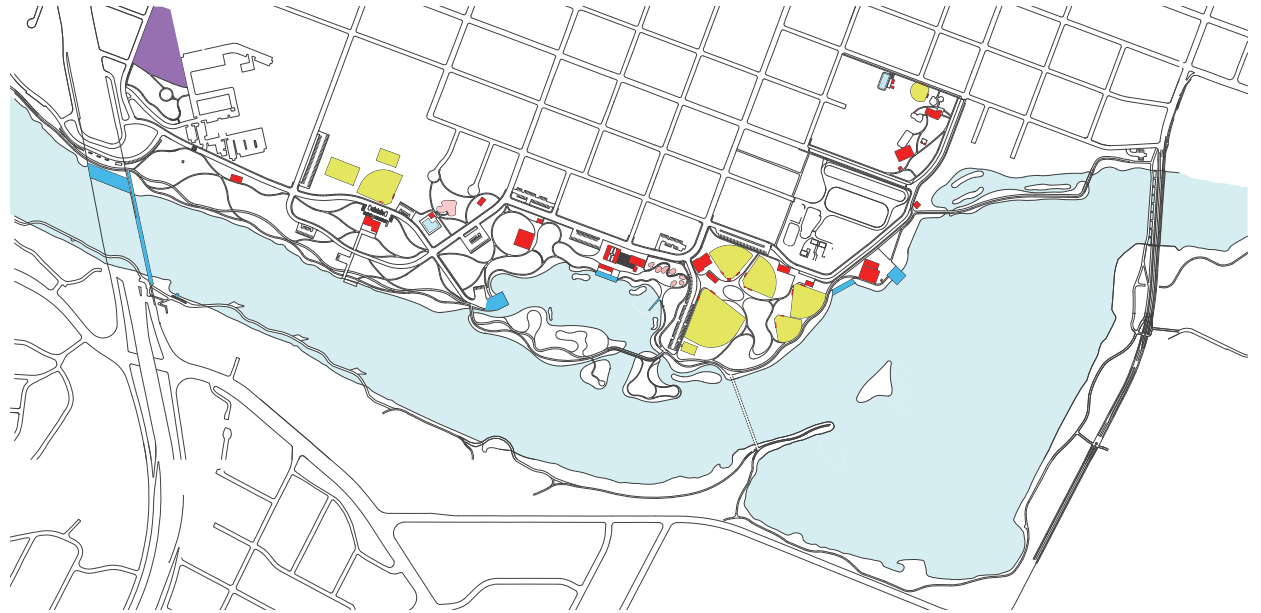


Figure 27.
Existing Master
Plan Amenities



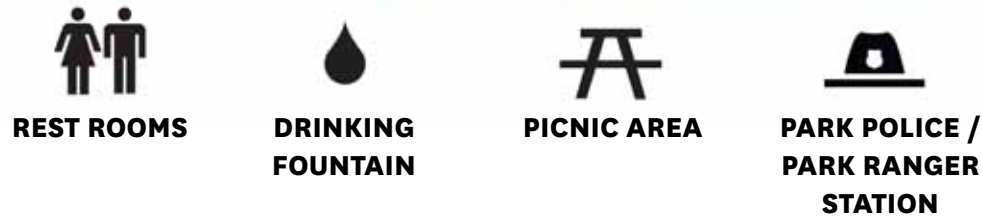
- Structure/Buildings
- Community Garden
- Sports Fields
- Playgrounds
- Pools
- Docks

Figure 28.
Proposed Master
Plan Amenities



- Structure/Buildings
- Community Garden
- Sports Fields
- Playgrounds
- Pools
- Docks

Figure 29.
Proposed Park
Facilities



During the many conversations with neighbors and park users over the length of the master planning process the message was loud and clear: “This is our neighborhood park, it just needs to be a better version of itself.”

The focus of the plan is how to make the much-needed improvements, without fundamentally altering the character of the park. Some of the improvements are as simple as planting more trees to make more shade, providing more rest rooms, drinking

fountains, picnic areas, shade structures, and better furniture to improve comfort. Improving maintenance to ensure the park looks its best throughout the year is also a priority.

New amenities and facilities are proposed in the master plan, all serving the over-arching goal of making Holly Shores a high quality neighborhood park, a place where people can come together to relax, to play, and to spend time with friends and family.

Align with the 1989 Town Lake Plan

Recognizing the strong relationship between the park and the neighborhood, the 1989 Town Lake Plan recommended “an overriding park policy of thoroughly involving residents and community leaders in the planning and administration process” for this area. The MVVA master planning team embraced this approach wholeheartedly, and recommends the same as the process moves forward.

The Plan emphasized improved park facilities, lighting and security, while maintaining the generally pastoral character of the area, and adding trees to improve park shade and comfort. The fences around Fiesta Gardens were suggested to be removed, and community program to be provided here. A new channel and bridge was suggested to improve water quality in the lagoon by increasing flow, and access down to the water’s edge was created through a new amphitheater lawn. A new trail connection was suggested on a boardwalk over the lake along the east side of the Holly Plant. Following the decommissioning this link can now be made through the park itself.

LEGEND

- 1. Open Fiesta Gardens**
- 2. New Channel**
- 3. Amphitheater**
- 4. Pastoral Character**
- 5. Boardwalk**

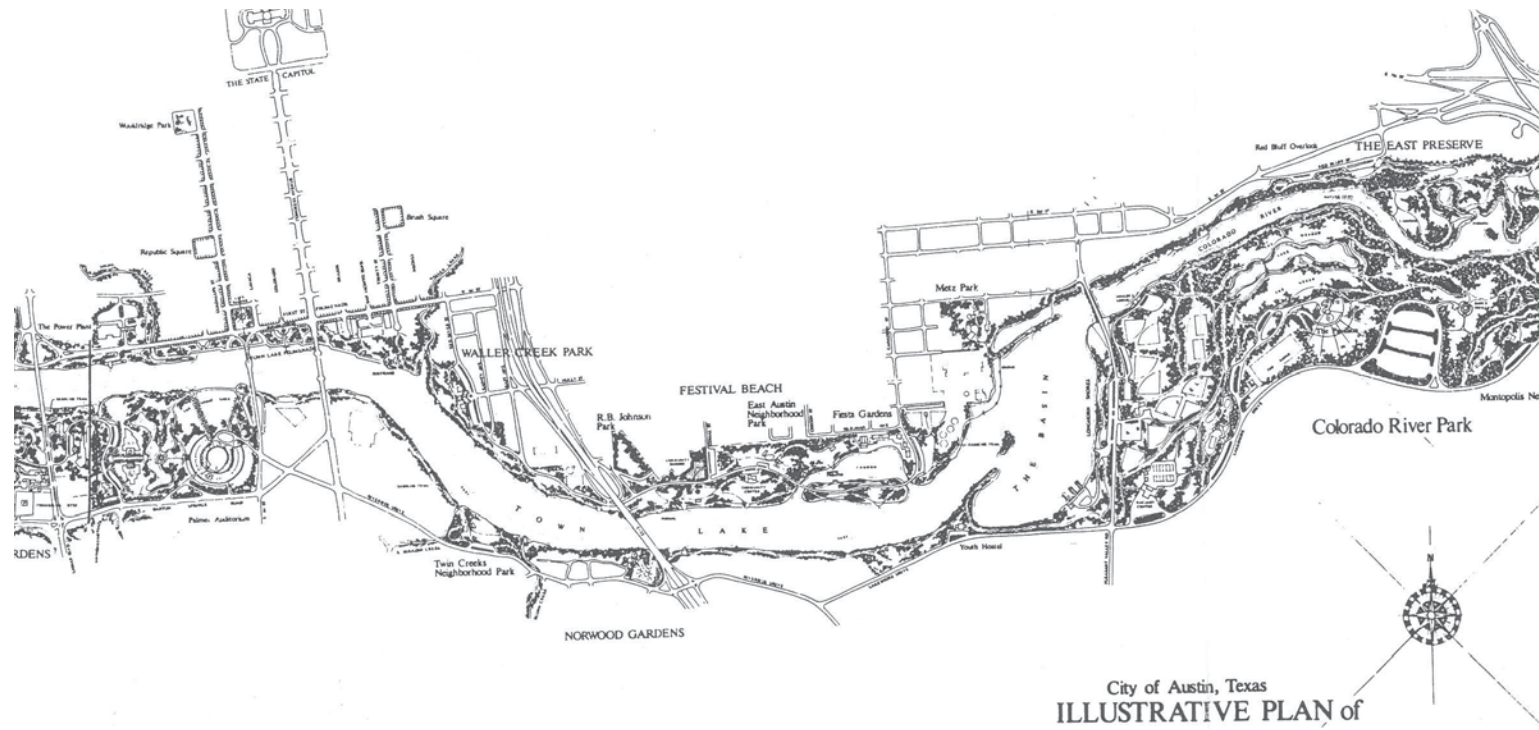


Figure 30.
Town Lake Comprehensive
Plan



Figure 31.
Town Lake Comprehensive
Plan Key Elements

Improve path and trail connections around the Austin Energy property

(Existing)

For the past fifty years the Holly Power Plant has interrupted movement around Lady Bird Lake and Holly Shores. The neighborhood streets of Riverview, Haskell, Holly and Pedernales are blocked by the plant, and the pedestrian trail around the edge of Lady Bird Lake is forced to turn inland away from the lake between Holly and Pedernales streets.

Reconnecting these streets with paths and trails, and adding new ones following the decommissioning of the plant will be transformative. The high boundary fence of the plant currently runs along the eastern edge of the ball fields, creating a dead end with very few general park users entering this area. On the other side of the plant Metz Park is isolated from the rest of the Holly Shores park, a situation that can be corrected as part of this master plan.

LEGEND

1. **Parking**
2. **Playground**
3. **Pedestrian & Cycle Trails**
4. **Concessions**
5. **Ball Fields**



Figure 32.
East Park Existing
Conditions Plan

Improve path and trail connections around the Austin Energy property

(Proposed)

Holly Street is opened up between Mildred and Pedernales and Pedernales is connected around the east side of the Holly Plant to Riverview, all as a pedestrian and bicycle routes, with occasional access allowed to Austin Energy maintenance vehicles, emergency services, and access to support the proposed Lakeside Performing Arts Center.

The improved connections around the Austin Energy property will increase levels of activity in this area, making it a seamless part of the rest of the parkland, . The Lakeside Warehouses for Community Use, in former Austin Energy buildings, will create a focus of activity with panoramic views across Lady Bird Lake. The bicycle and footpath trails will be connected between the ball fields and the Metz Peninsula, and integrated with new accessible park footpaths and sidewalks.

LEGEND

1. Existing Parking
2. Canoe Launch
3. Playground
4. Picnic Garden
5. Concessions
6. Viewpoint
7. ADA Accessible Paths
8. Pedestrian, Bicycle and Service Path
9. New Street Trees on Holly Street
10. Steps & Deck
11. Lakeside Warehouses for Community Use
12. Pier
13. Enhanced Existing Park Facilities
14. Ball Fields
15. Covered Basketball Court
16. Wetland Habitat Islands

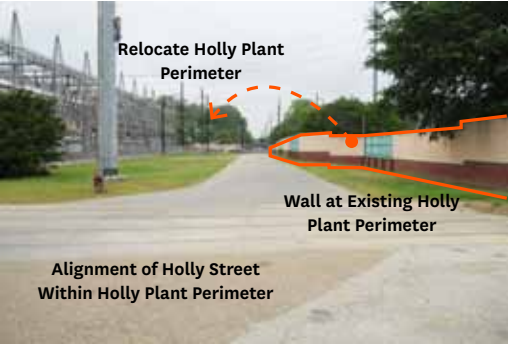


Figure 33.
East Park Illustrative
Plan

Relocating the Holly Plant perimeter wall from the north to the south side of Holly Street will allow the street to open up to Metz Park, forming a new active edge. The street will be designed through the choice of materials and detailing to be a park pathway, open to bicycles and pedestrians. Removable bollards will allow occasional access for Austin Energy maintenance and emergency vehicles.

The perimeter will continue to be an art wall, animating this edge of the park, and a row of street trees will provide shade and a sense of enclosure along the north side of the street.

Figure 34.
Holly Street Reconfiguration



Art Wall at Relocated Holly Plant Perimeter

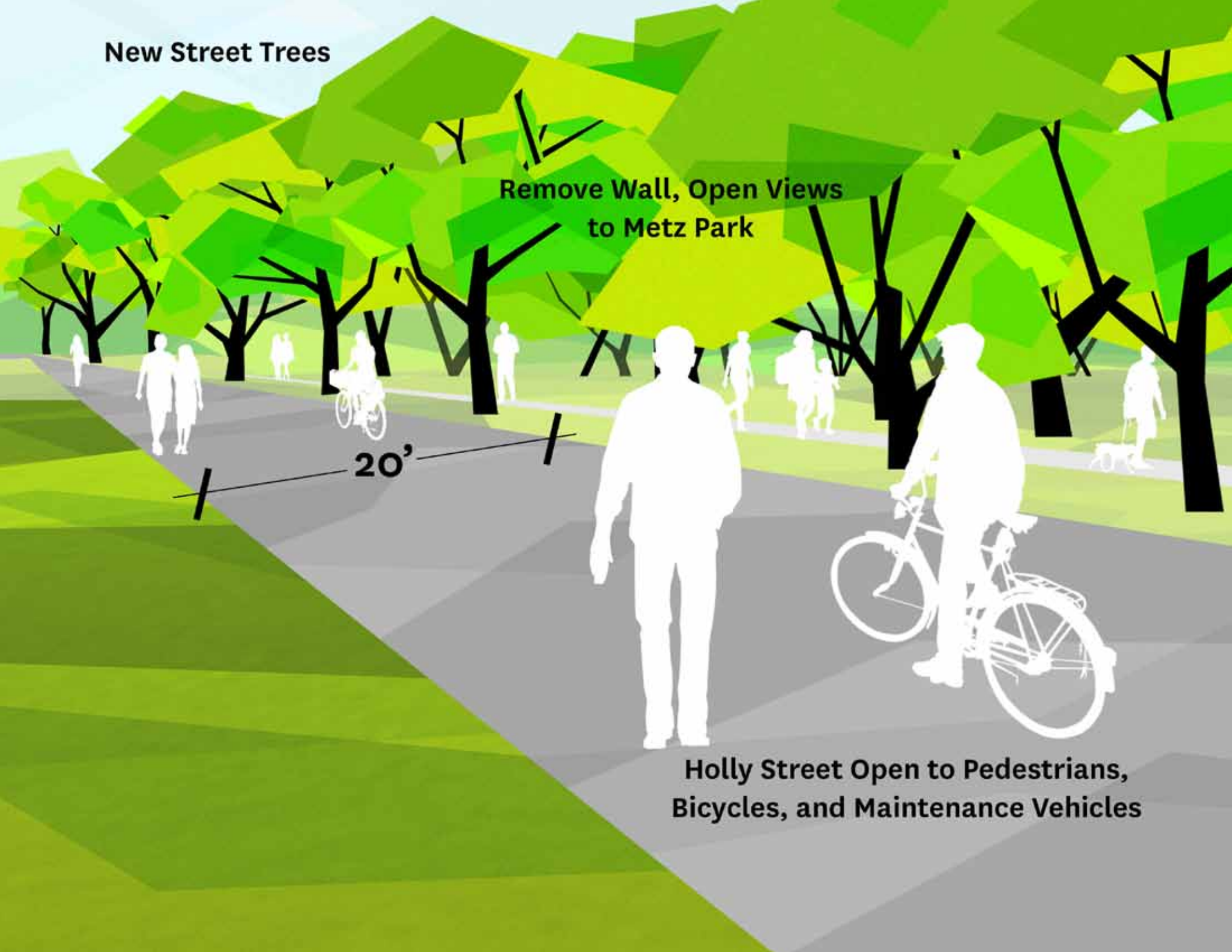
Figure 35.
Holly Street Reconfiguration
Proposed View

New Street Trees

**Remove Wall, Open Views
to Metz Park**

20'

**Holly Street Open to Pedestrians,
Bicycles, and Maintenance Vehicles**



Integrate ball fields with the wider park landscape

(Existing)

The ball fields west of the Holly Plant are an intensely used area of the park, and are effectively at the end point of the existing Holly Shores parkland, as the Holly Plant blocks access to the east. The lack of connections through the area make the ballfields seem isolated from the rest of Holly Shores, and this feeling is reinforced by the lack of a park-like setting for the fields with shade trees, lawns and planting that would create a more comfortable and attractive landscape. Although the lake edge in this area has some rich habitat, plantings have been allowed to become overgrown, and parts of the landscape can feel unsafe.

The Lorraine “Grandma” Camacho Activity Center is an important facility in this part of the park, providing year round activities, events and classes for children and adults. There is great potential for this area to become more multi-functional, anchored by the ball fields, but animated by a greater diversity of program and a greater range of landscape types.

LEGEND

1. **Parking**
2. **Playground**
3. **Pedestrian & Cycle Trails**
4. **Concessions**
5. **Ball Fields**



Figure 36.
Ball Fields Existing
Conditions Plan

Integrate ball fields with the wider park landscape

(Proposed)

The new park area, vacated by the Holly Plant, creates enough space to open up the arrangement of the ball fields and to introduce a generous ribbon of park landscape with shade trees and lawns running through the middle of this area. The existing number and size of fields will remain, but this part of the park will be transformed from a single-use sports amenity, to a comfortable and integrated part of the wider landscape. This change will support the function of the ball fields, as families or groups will be able to come and enjoy the game, while family members not directly involved in the game can relax and enjoy the park, perhaps preparing food at the picnic garden, or admiring Lady Bird Lake from the raised viewpoint.

Relocating the concessions to create a focus of activity between the Camacho Center and the picnic garden will further reinforce this area as one of the main attractions of the park.

LEGEND

1. Existing Parking
2. Canoe Launch
3. Playground
4. Picnic Garden
5. Concessions
6. Raised Viewpoint
7. ADA Accessible Paths
8. Pedestrian, Bicycle and Service Path
9. New Street Trees on Holly Street
10. Steps & Deck
11. Lakeside Warehouses for Community Use
12. Pier
13. Enhanced Existing Park Facilities
14. Ball Fields
15. Covered Basketball Court
16. Wetland Habitat Islands



Figure 37.
Ball Fields Illustrative
Plan

Figure 38.
Picnic Garden
Proposed View



Figure 39.
Picnic Garden
Existing Conditions View

Figure 40.
Concession Area
Existing Conditions View



The ball fields will have a new central focus, a place to buy a drink or snack, a place to have a picnic with the family or the whole team, a place to relax between games. Bringing together in one location a replacement concession building with rest rooms, a picnic area, and areas of lawn shaded by new trees, and putting this all close to the Camacho Center will have multiple benefits to ball players and general park users. Families who have children playing ball and children that need to be entertained during the game will have more options; activities in the Camacho Center will be able to spill out and use these new

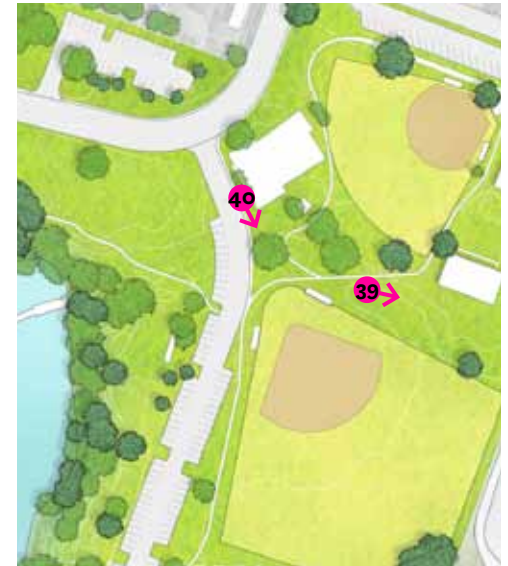
outdoor spaces, and passers by will have a comfortable place to stop and view the action.

The existing parking lot will be renovated and new trees planted to shade the cars. On a weekend in the off-season as people come to use the barbecue pits in the picnic garden, play on the lawns, or come for a stroll beneath the trees, this part of the park will be playing its part as an integrated year-round part of Holly Shores.



Figure 41.
Concession Area
Proposed View

Figure 42.
Viewpoint location Plans
Existing and Proposed



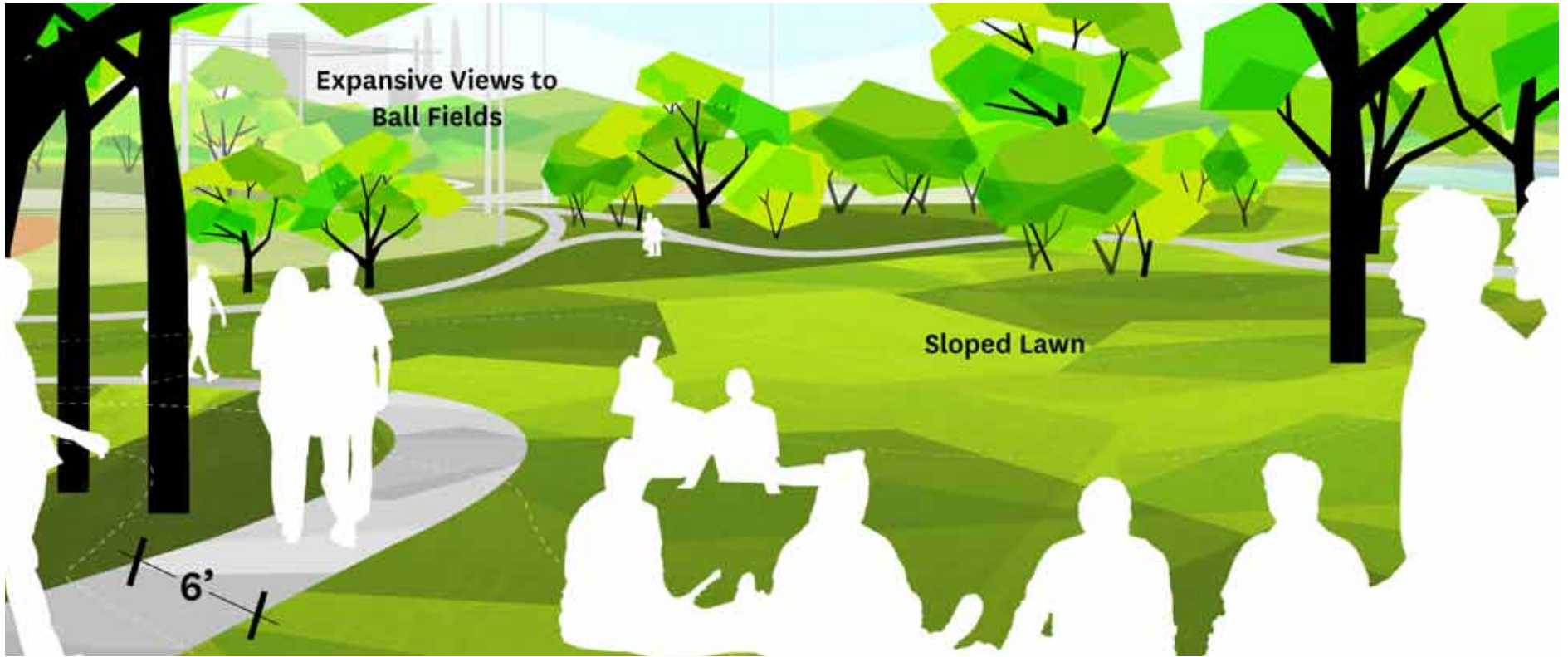


Figure 43.
Ball Fields Viewpoint
Proposed View

Figure 44.
Ball Fields Existing Conditions
View



Figure 45.
Viewpoint location Plans
Existing and Proposed



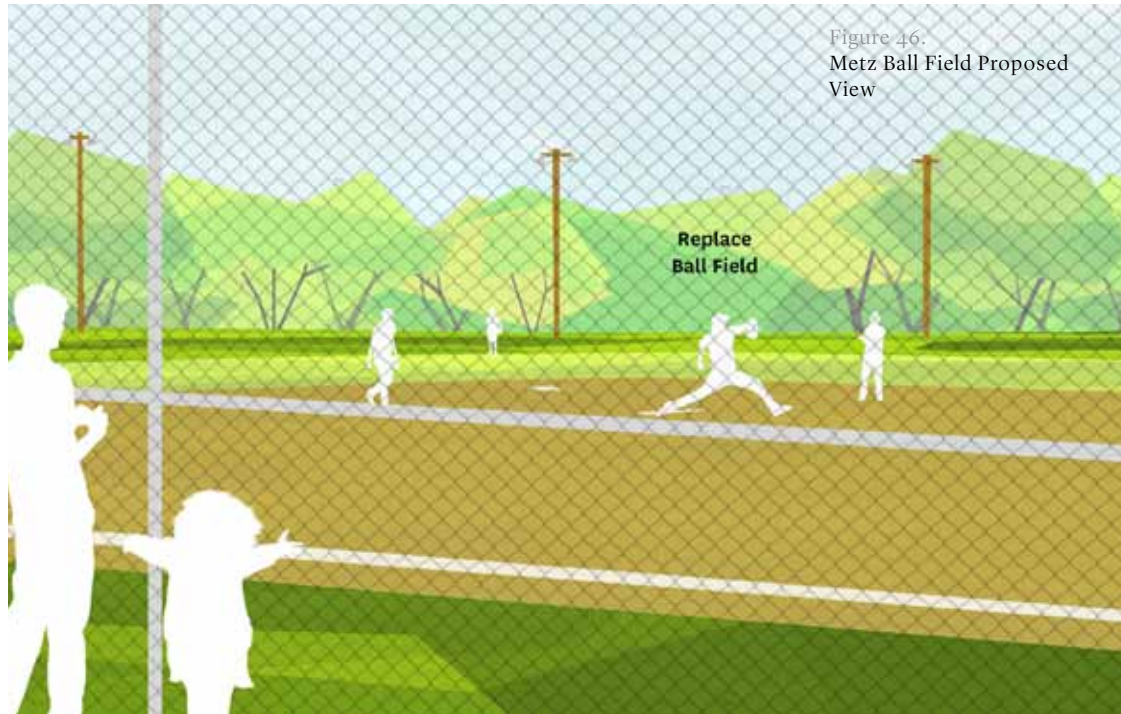


Figure 46.
Metz Ball Field Proposed
View



Figure 47.
Viewpoint location Plans
Existing and Proposed

Figure 48.
Metz Ball Field Existing
Conditions View

The area around the ball fields is so flat that only a modest rise in the land will create great views. Near the edge of the lake, on the east side of the ball fields, we suggest making a sloped lawn, fringed by shading trees that rise around ten feet to afford sweeping views over the lake and views of all the ball fields. People using the trails might choose to take a rest here. It would be a great spot for a picnic, a game of frisbee, or a small gathering. The ball fields in this area are arranged to avoid the Austin Energy easement required to maintain their overhead power transmission lines.

The temporary parking lot at Metz will be removed and the children's ball field will be rebuilt, providing a local place to play ball for smaller children away from the more intense atmosphere of the main ball field area.



Improve Lagoon water quality and open to the surrounding landscape

(Existing)

Its history as a gravel quarry give the lagoon its steep side slopes, carved into the gently rising grade of the surrounding landscape. Over time these slopes have become overgrown with dense trees and shrubs, creating some habitat value, but further separating the lagoon from its park context. A series of active facilities surround the lagoon but do not fully connect with the sheltered water body. Fiesta Gardens was built to take advantage of views to the lagoon, and is now surrounded by high fences. Likewise, the Johnny Degollado Pavilion hosts a series of popular events throughout the year, but could make so much more of its water-side location. A small canoe launch on the east side of the lagoon offers one opportunity for contact with the water, as does a boat launch on the south side. The water quality in the lagoon is currently poor due to separation from the main flows of the lake.

LEGEND

1. **Parking**
2. **Boat Launch**
3. **Jonny Degollado Pavilion**
4. **Fiesta Gardens**
5. **Playground**
6. **Ball Fields**
7. **Pedestrian and Cycle Trails**



Figure 49.
Festival Beach Lagoon
Existing Conditions Plan

Improve Lagoon water quality and open to the surrounding landscape

(Proposed)

As the Town Lake Plan recognizes, a new channel on the upstream side of the lagoon will allow water to flow through the lagoon and so improve water quality. On the downstream side, several new channels will be cut to improve flow further, and to create new lake-edge and island habitats.

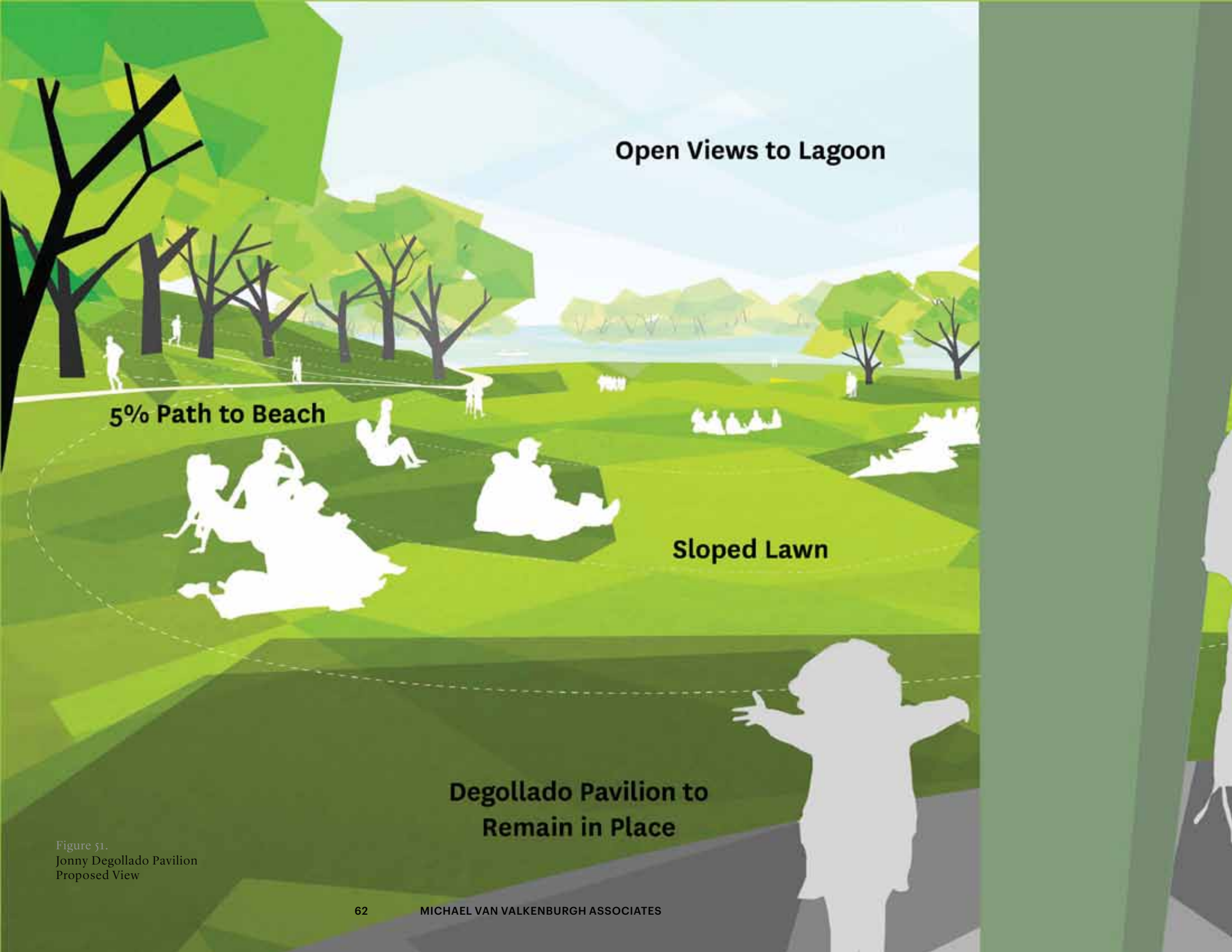
The steep slopes around the lagoon will be regraded to provide more open views to the lagoon from the area around the Johnny Degollado Pavilion and on the island on the south side, accessible paths will be added down to the lagoon and around the water's edge. The steep edge below the water line will be regraded for safety and to improve habitat planting. Fences around Fiesta Gardens and along Jesse E. Segovia Street will be taken down, and the PARD operations relocated from Fiesta Gardens, which will be opened to the public for community use focused on youth and senior programs. All of these changes will make the lagoon a more welcoming area better integrated with the surrounding park and life of the neighborhood.

LEGEND

1. Existing Parking
2. New Lake Channels
3. Enhance Lake Edge Habitat
4. Boat Launch
5. ADA Accessible Paths
6. Retain Existing Jonny Degollado Pavilion
7. Sloped Event Lawn
8. Opened & Enhanced Fiesta Gardens
9. Playground
10. Picnic Garden
11. Concessions
12. Canoe Launch
13. Steps and Deck
14. Wetland Habitat



Figure 50.
 Festival Beach Lagoon
 Proposed Plan



Open Views to Lagoon

5% Path to Beach

Sloped Lawn

**Degollado Pavilion to
Remain in Place**

Figure 51.
Jonny Degollado Pavilion
Proposed View



The Johnny Degollado pavilion, west of Fiesta Gardens' is an important cultural facility in the neighborhood and center of activity in the park, hosting a series of popular events throughout the year. The pavilion is currently separated from the surrounding park by high fences and gates, and is separated from the lagoon, despite its proximity, by a steep slope with overgrown planting.

The master plan proposes to retain the pavilion in its current location, to remove the fences around it, allowing for daily access to the area, and to open up views and access between the pavilion and lagoon with a gently sloped lawn and ADA accessible paths. In this way the pavilion will become an attractive asset to the park all year round and will retain its role as a venue for events of a similar size and nature as it currently accommodates. The neighborhood was clear that the event program at the pavilion should not be increased in frequency or size. During events temporary fences should be erected as required, and studies should be done to reconfigure the stage area within the pavilion to minimize sound travelling to the neighborhood.

The combination of existing flat lawn to the west of the pavilion and a new south east facing sloping lawn down to the lagoon, along with new shade

trees, will improve the comfort and function of this area both for event and non-event days, making the pavilion and its surrounding landscape a connection between the lagoon and the rest of the park.

An improved and accessible pathway to Fiesta Gardens will also be provided, with a small parking lot along Jesse E. Segovia Street on the site of the current parks department maintenance yard, creating a continuous park landscape in the north western side of the lagoon.

Figure 52.
Jonny Degollado Pavilion
Existing Conditions View

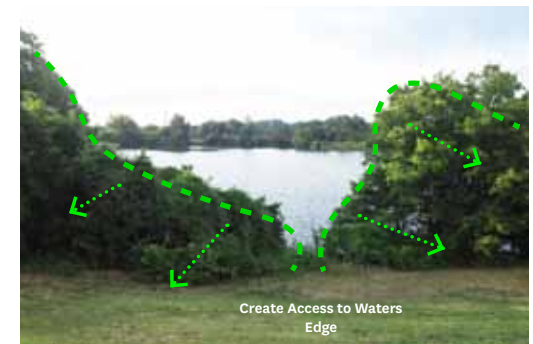


Figure 53.
Festival Beach Playground
Proposed View



Figure 54.
Festival Beach Playground
Existing Conditions View



The north eastern corner of the lagoon has particular potential as a center for children's activities, situated as it is between Fiesta Gardens and the Camacho Center, with good accessibility from Jesse E. Segovia Street and nearby parking. Currently this area is fenced off as part of the Fiesta Gardens area and a small canoe rental facility operates on the Lagoon.

The master plan recommends developing this area as a center of children's activity. A new playground overlooking the lagoon and connecting the upper street level of the park with the lagoon edge will be the center of activity.

An accessible path will meander through the playground, which could be laid out as a series of smaller garden-like areas within a planted landscape of shade trees and low flowering shrubs, giving the children the joy of playing in a natural environment and creating comfortable shaded places for adults to sit. Water play fountains could be included in the playground.

Canoe rental could continue on the lake edge with an improved and accessible launching dock, connected to the rest of the park by new accessible pathways, allowing canoeists of all abilities to participate.

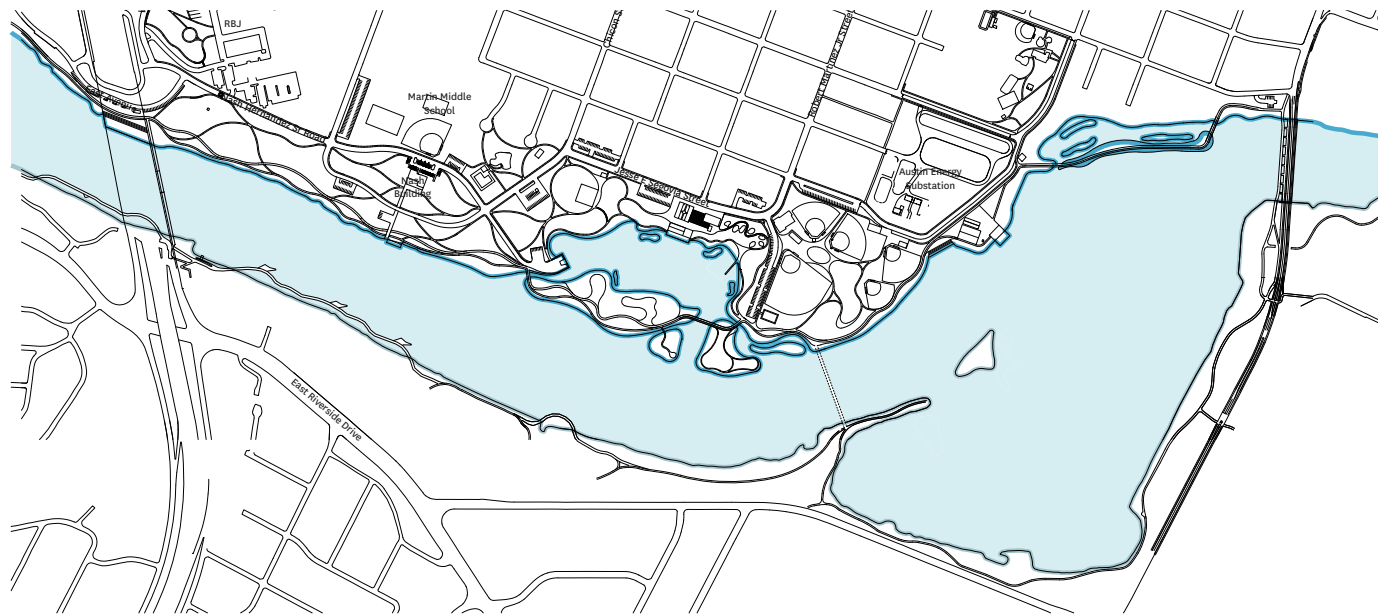


Figure 55.
Existing Shoreline Diagram

15,450' Existing Shoreline for Holly Shores

Existing South
Shoreline to Remain

Figure 56.
Proposed Shoreline Diagram



20,750' Reconfigured Shoreline for Holly Shores

Proposed Shoreline

Existing South
Shoreline to Remain

The rich shoreline habitat is one of the highly valued assets of Holly Shores. The improvements around the lagoon and in other parts of the park, particularly the cooling pond to the east of the former Holly Plant, will include creating new channels to aid water flow and improve water quality. These improvements will lead to an increase in lake edge of over 25% in the park, creating both new habitat areas and new places for visitors to get right to the water's edge.



Figure 57.
Viewpoint location Plans
Existing and Proposed



Figure 58.
Lagoon Edge Proposed
View

Figure 59.
Lagoon Edge Existing
Conditions View



The lagoon has steep sides, which are mostly densely vegetated, owing to its origins as a gravel quarry. These conditions, along with the general grade separation with the rest of the park mean that the lagoon is largely separated from its surroundings, both visually and functionally. There are no accessible paths to the lagoon edge currently.

The master plan proposes regrading the lagoon edges in places to open views allowing the construction of accessible paths around the water's edge, and integrating the whole area with the rest of the park. Lowering the slopes on the southern side of the lagoon and reshaping

the edge, along with the planting of new shade trees and lawns, will create an attractive area for picnicking and passive recreation next to the water in an area that is very little used at present.

The water quality in the lagoon is currently poor, due to the limited connectivity with the main water flow through Lady Bird Lake. In line with the original Town Lake Plan, the master plan proposes opening new channels on the south western and eastern corners of the lagoon to allow water to flow through more freely. The new channels will be planted with native species to create new shoreline habitat. Detailed hydrological



Figure 60.
Lagoon Channel
Proposed View

modeling and water quality testing would be required as part of the design and permitting of this type of project.

As part of the re-shaping of the lagoon edge and introduction of new channels, the master plan proposes relocating the existing boat launch from the edge of the lake to the more sheltered waters of the lagoon. This will allow non-motorized boat users of all abilities to access the water, and will further strengthen the lagoon as a center of activity.



Figure 61.
Viewpoint Location Plans,
Existing and Proposed

Figure 62.
Lagoon Channel
Existing Conditions View



Improve pedestrian and bicycle accessibility and connectivity

Many people walk or bicycle to the park. Once there, enjoying the scenery while walking, jogging, and cycling are important recreational activities. The park also serves as a part of several city-wide trail systems, particularly the trails that ring Lady Bird Lake. The neighborhood culture is brought to the park by both the Tejano Music Legends Trail and the Tejano Healthy Walking Trail.

It is a clear priority of the community that accessibility to the park be improved, particularly given the proximity of the RBJ Center with its large senior population. The lack of sidewalks on some existing roads around the park, along with the materials and gradient of some existing paths in the park are currently an impediment to full accessibility.

The decommissioning of the Holly Plant will allow for the lake side trails to be connected, and improvements to the pedestrian and bicycle crossings at I35 and the Longhorn Dam will make those trails accessible and safer.

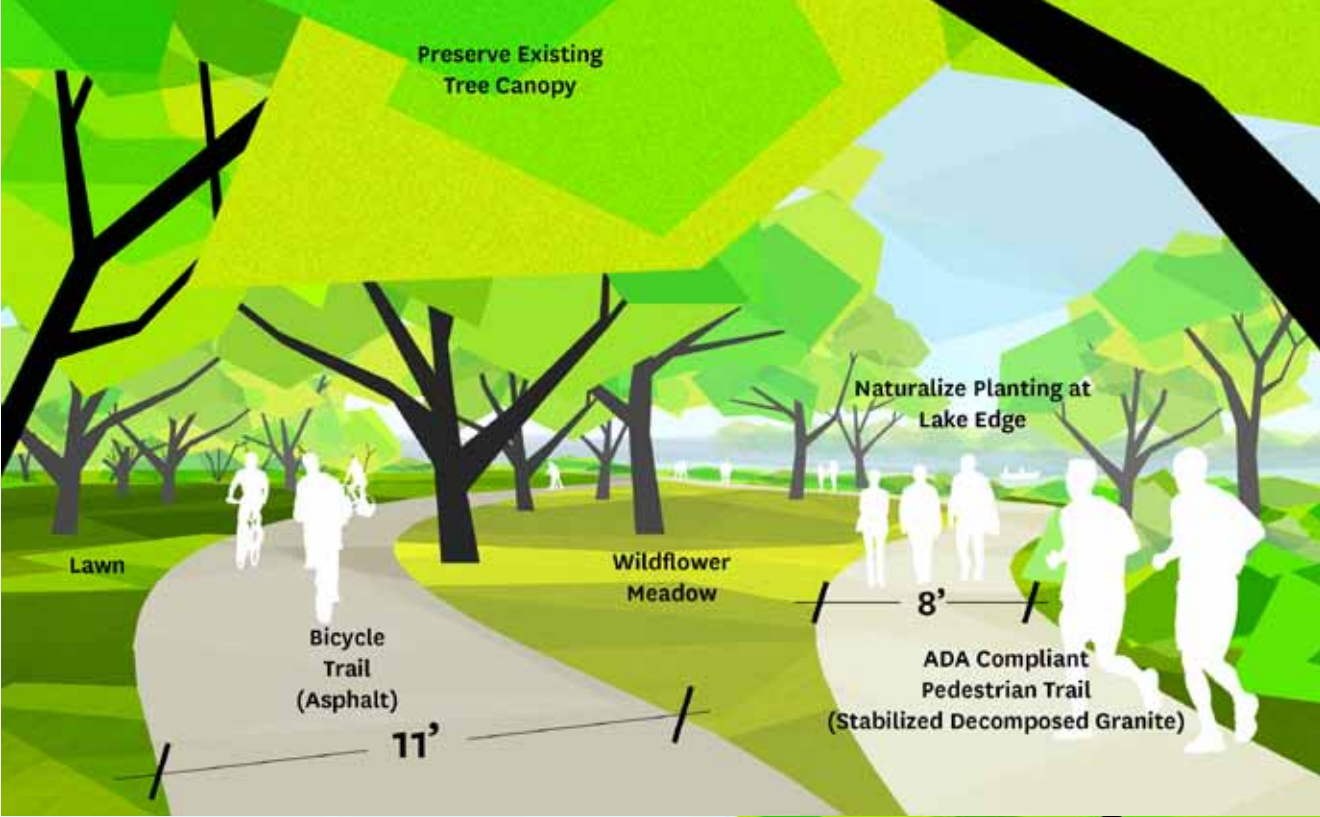


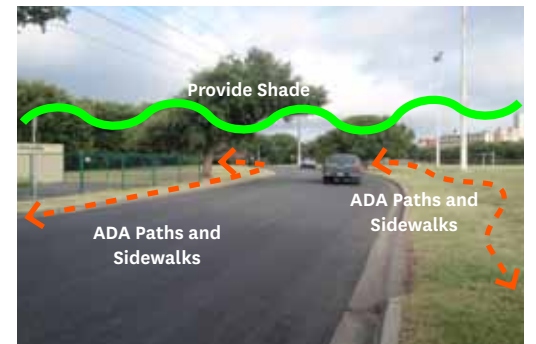
Figure 62.
Lakeside Trails Proposed View



Figure 63.
Nash Hernandez Sr. Road Proposed View

Figure 64.
Lakeside Trails Existing Conditions View

Figure 65.
Nash Hernandez Sr. Road Existing Conditions View



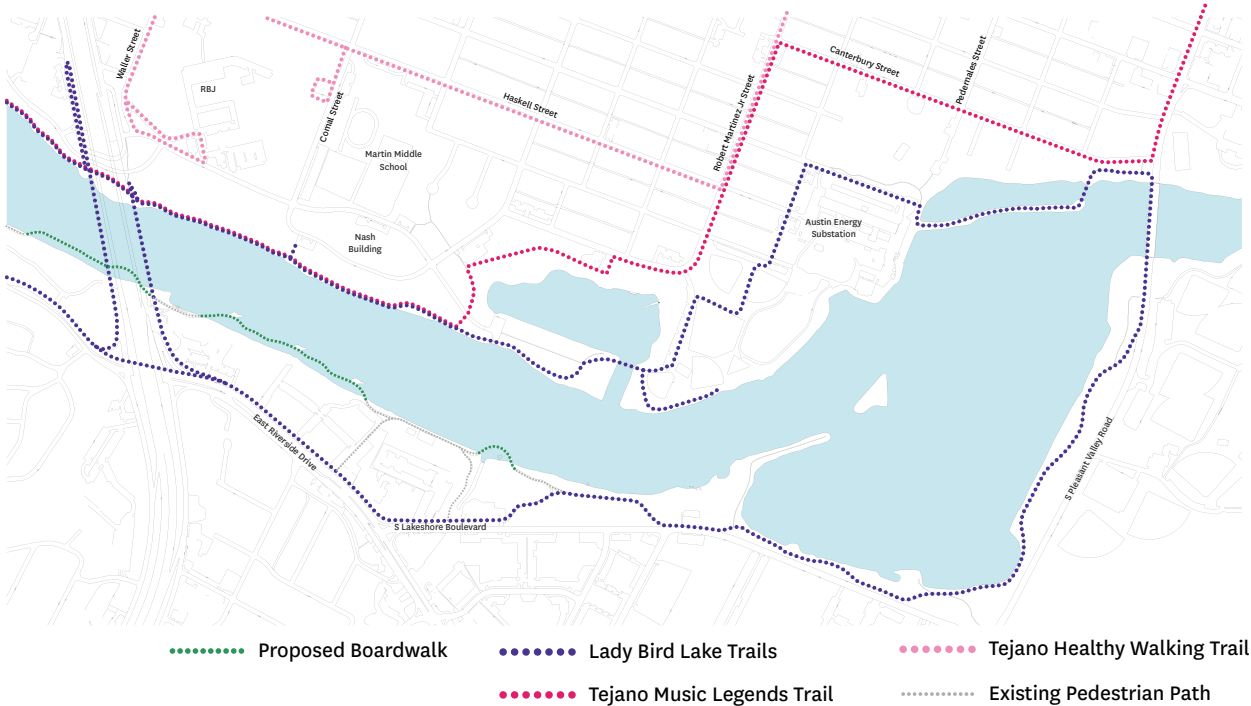
Pedestrian connections are all important for a neighborhood park like Holly Shores. The park is in many ways an extension of the neighborhood, so the approach, access and walking experience once in the park should be effortless and intuitive.

There are a number of existing trails in the park that are important both to the neighborhood and the wider community. The Lady Bird Lake Trails are part of a city-wide network that connect around the lake and to

other regional trail networks. The trail is currently prevented from following the lake edge by the Holly Plant, and completing this stretch of lake side trail will be a major improvement brought about by the decommissioning of the plant. Both the Tejano Music Legends Trail and Healthy Walking Trail are excellent connectors between the neighborhood and the park, and extend the culture of the neighborhood into the master plan area.

There are, however, many

Figure 66.
Existing Pedestrian Paths
and Trails Diagram



deficiencies with the current path network, and large areas of the park are not universally accessible, either due to steep grades or to path materials. Many of the roads surrounding the park do not have sidewalks and create a barrier to safe pedestrian movement.

The master plan proposes completing the lake side trail connections and adding fully accessible pedestrian routes across the lake at I35 and the Longhorn Dam. There is also a possible future connection across the

lake at the middle of the park. The park itself is improved with a network of new, accessible pedestrian paths which link all major facilities and connect with new sidewalks on the adjacent streets. The two Tejano Trails are accommodated in the park and well connected to the new pedestrian routes.

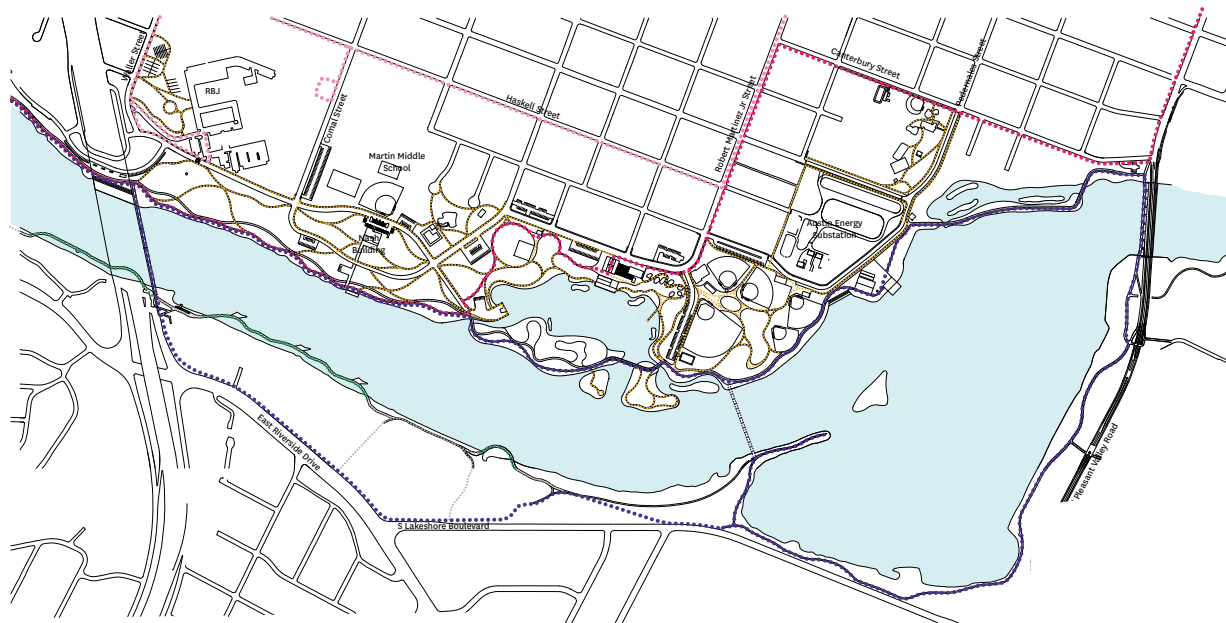


Figure 67.
Proposed Pedestrian Paths
and Trails Diagram

- Lady Bird Lake Trails
- Tejano Music Legends Trail
- Tejano Healthy Walking Trail
- Existing Pedestrian Path
- Future Boardwalk
- Proposed Pedestrian Paths and Bridges
- Possible Future Connection

Figure 68.
Existing Bicycle Routes
Diagram



The existing network of bicycle trails is not well connected to the park, and there are very few bicycle accommodations within the park itself, apart from a few on-road shared facilities in the western area.

The master plan proposes dramatically increasing bicycle trails throughout the park and improving connections to city-wide bicycle networks. The Lady Bird Lake Trail will have a dedicated bicycle component, separated from pedestrians, and this will follow the shoreline all the way from I35 to the Longhorn Dam, which will itself have a new bicycle connection on the

north side of the dam structure. The Lady Bird Bike Trail will be connected back to city-wide trails at various points in the park, including Chicon Street, Robert Martinez Junior Street, Riverview Street, Holly Street and Pedernales Street.

Bicycle parking should be provided near all the major park facilities to encourage visitors to use bicycles to access the park, and to encourage users of the trails to stop, take a break, and use the park facilities.

Figure 69.
Proposed Bicycle Routes
Diagram

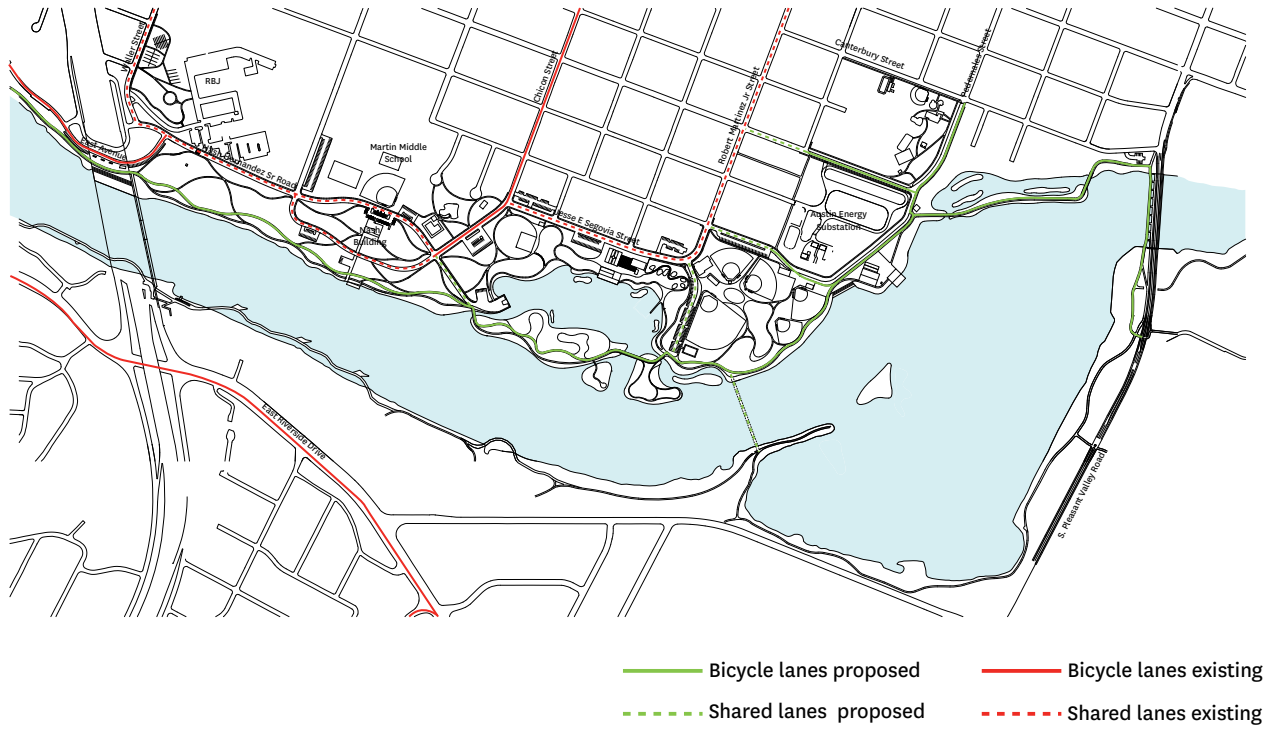


Figure 70.
East Elevation of
Proposed Bridge
(existing bridge beyond)

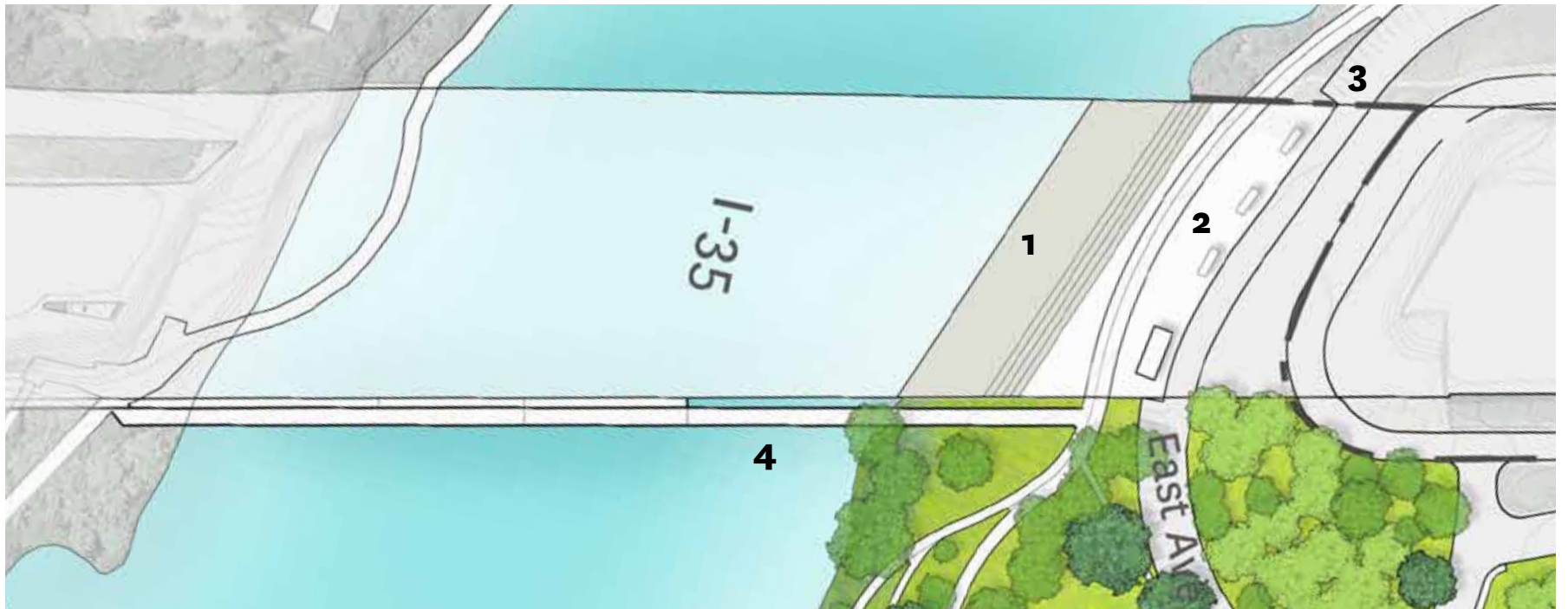
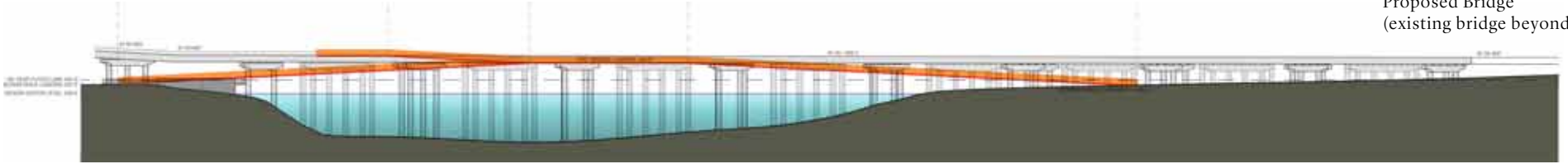


Figure 71.
Pedestrian Bridge
Proposed Plan

1. Fishing Deck
2. Multiuse Plaza
3. Parking
4. 5% Accessible Path

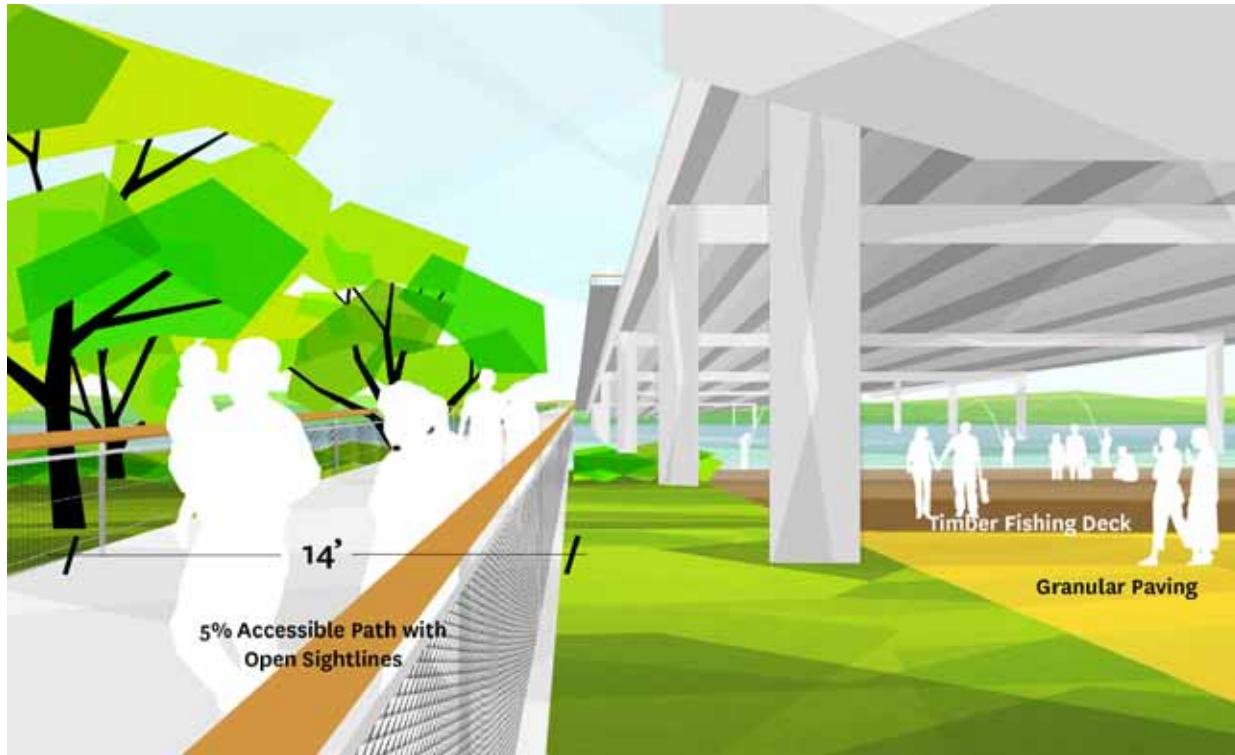


Figure 72.
View of Proposed
Pedestrian Bridge Next
to IH 35

The Lady Bird Lake shoreline area beneath the I35 highway bridges is a large, shaded and unusually tranquil place. Despite its current status as a leftover space that has not been designed for comfortable use, it does act as a kind of threshold to the Holly Shores area and accommodates a number of ad hoc activities including fishing, boating, jogging, walking, bicycling and parking. The shade offered by the highway bridges makes it a surprisingly comfortable place to be.

The master plan proposes improving all of the current activities by:

defining a clear main trail with separated areas for “wheeled” and “non-wheeled” users and constructing a trail head with stretching area; extending a new pedestrian/bicycle bridge that connects to the boardwalk on the south shore; creating a large timber fishing deck extending into the water under the shade of the bridges; locating a bike station for bike rentals as part of the City’s new Bike Share program; connecting to the multiple new trails proposed in the Park; and providing way-finding, signage and lighting.

Figure 73.
Pedestrian Bridge Next
to IH 35 Existing View



Figure 74.
Longhorn Dam Existing
View



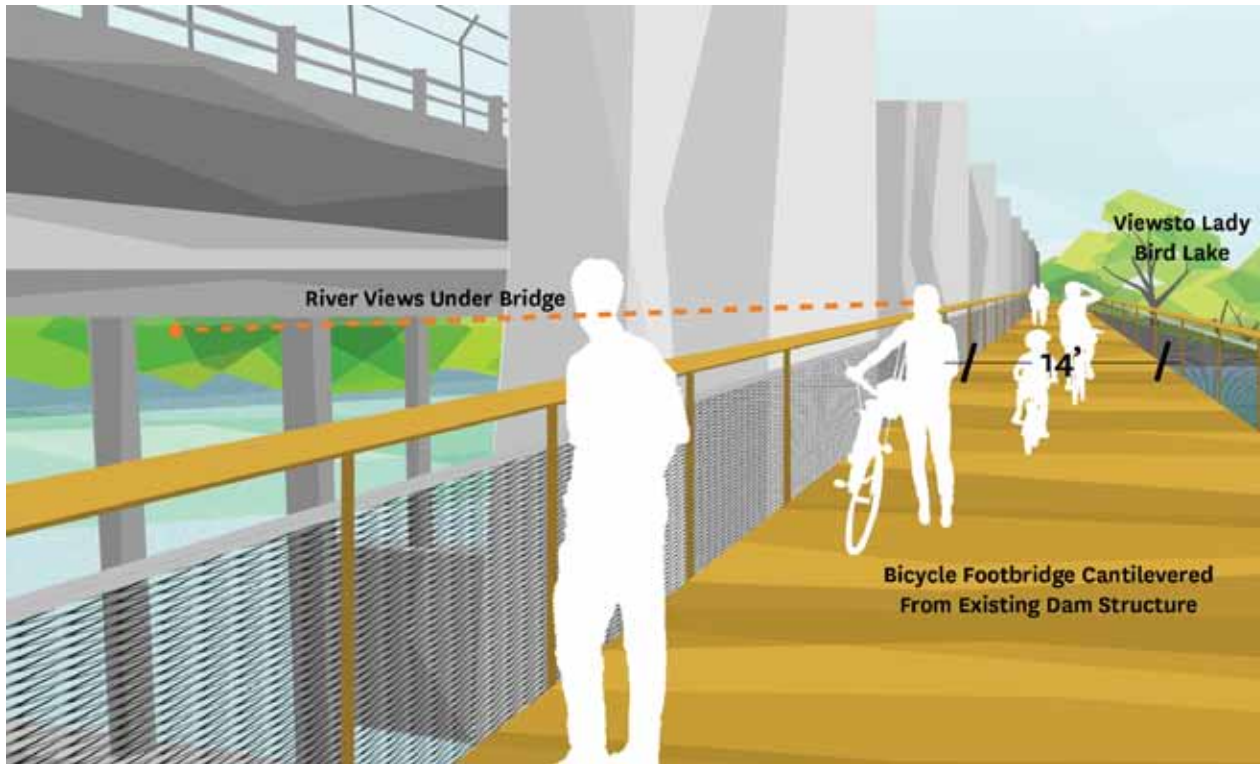
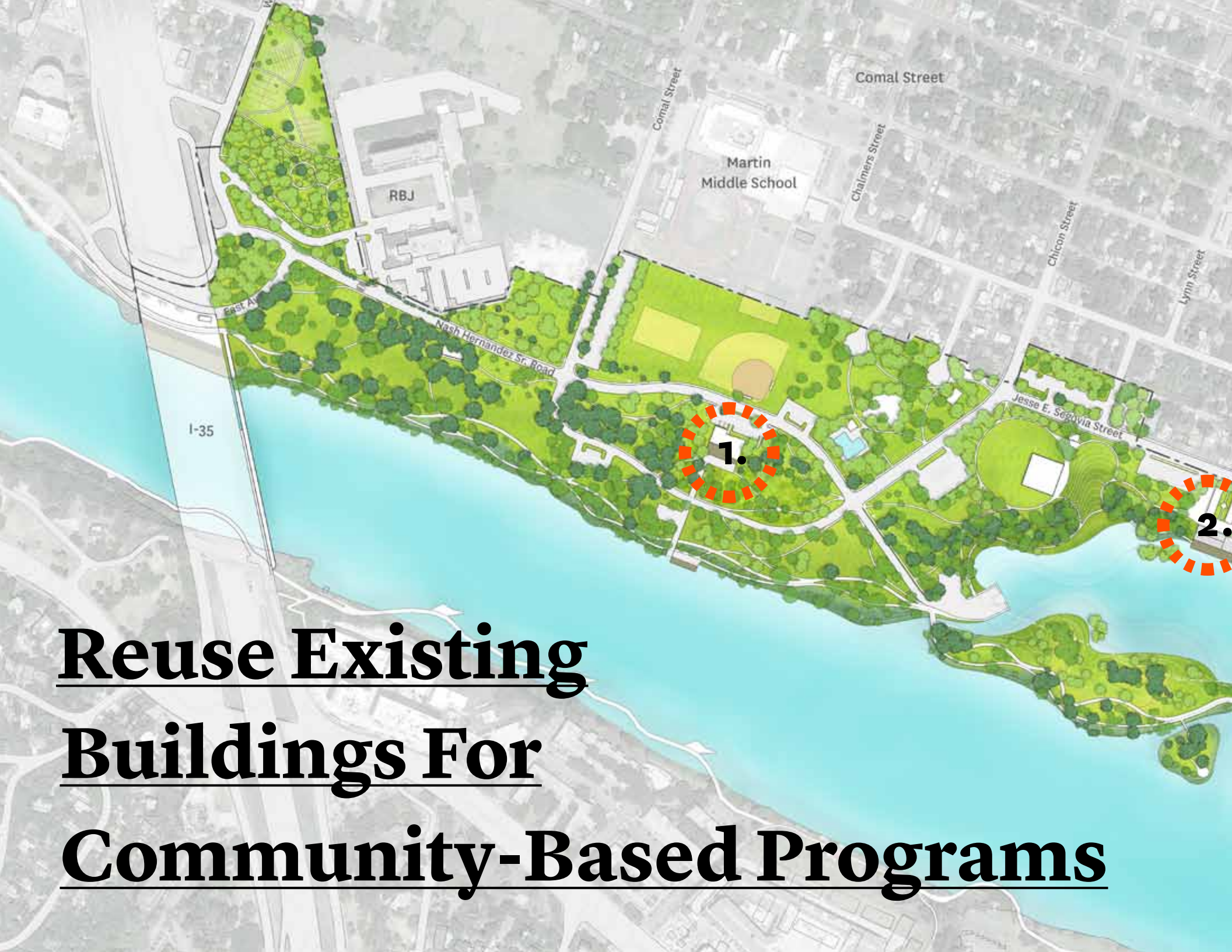


Figure 75.
Longhorn Dam Pedestrian
and Bicycle Connection
Proposed View

The Longhorn Dam crossing is a poor experience for pedestrians and cyclists. A long-term goal of the master plan is to construct a dedicated pedestrian and bicycle bridge cantilevered from the north side of the massive dam structure. This connection would complete the sections of Lady Bird Trail on the north and south shores, and would allow users to move around this end of the lake without coming into contact with cars.

The proposed bridge would be constructed below the level of the deck of Pleasant Valley Road, and to the north side. In this way much of the traffic noise from the road will be buffered by

the structure of the dam, and the broad views of Lady Bird Lake to the west will be complemented by views under the bridge to the wilder landscape of the downstream Colorado River. This will be the only place where these two views can be seen simultaneously.



Reuse Existing
Buildings For
Community-Based Programs



Austin Energy Substation

3.

- 1. Nash Hernandez Building
- 2. Fiesta Gardens
- 3. Shoreline Warehouses

Figure 76.
Building Reuse Plan Diagram

Nash Hernandez Building

This existing two-story structure is currently being designed for reuse by the City's Park Rangers and Park Police. This group will occupy most of the two floors of the building and will also need a new pier structure where its boats can launch quickly from the adjacent shoreline, as shown on the Master Plan.

Figure 77.
Nash Hernandez Building
Proposed Plan



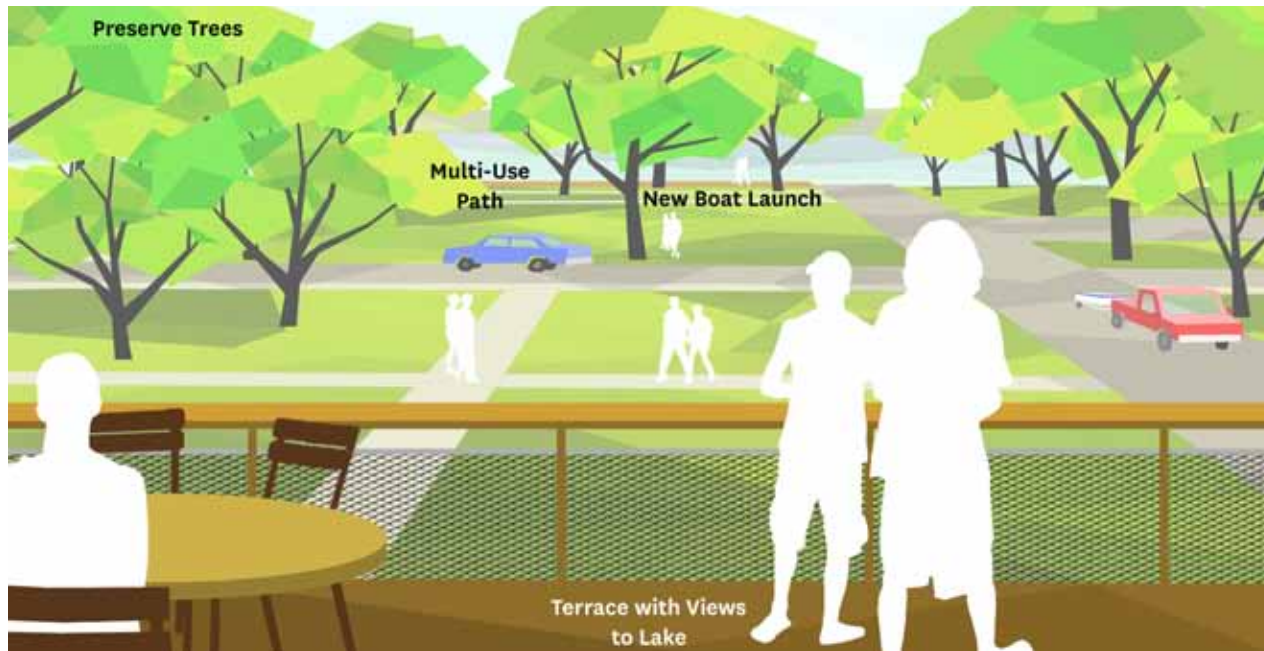


Figure 78.
Nash Hernandez Building
Proposed View from Terrace

There is an opportunity to create some shared spaces for the community within the remodeled building, as well as a shaded, outdoor deck extending south toward the Lake, as shown on the Upper level plan.

The shared community spaces might include: a community meeting and dining space; a commercial learning demonstration kitchen that can be a center for learning healthy meal preparation; publicly-accessible rest rooms and healthy food and drink vending. This program could be linked to community permaculture and “food forest” areas in the western part of the park between the RBJ Center and I35, adjacent to the existing community

gardens. These sustainably planted areas would be integrated into the overall pastoral landscape of the west park.

Figure 79.
Nash Hernandez Building
Existing South Elevation

Figure 80.
Nash Hernandez Building
Existing View from Terrace



Fiesta Gardens

The existing Fiesta Gardens Complex consists of the Fiesta Gardens Building, which is used as a public rental venue for events and parties, and the two “Mercado” Buildings, constructed in the 1960s, which are used by the Parks Department for maintenance and storage purposes. They have a unique location in the heart of the park, overlooking

the Lagoon, yet this area is surrounded by high fences and is most of the time inaccessible to the community.

The Master Plan proposes that these buildings be unfenced, opened to the public for community use and linked to the adjacent parkland and to the Lagoon edge.

Figure 81.
Fiesta Gardens Proposed
Community Reuse Plan



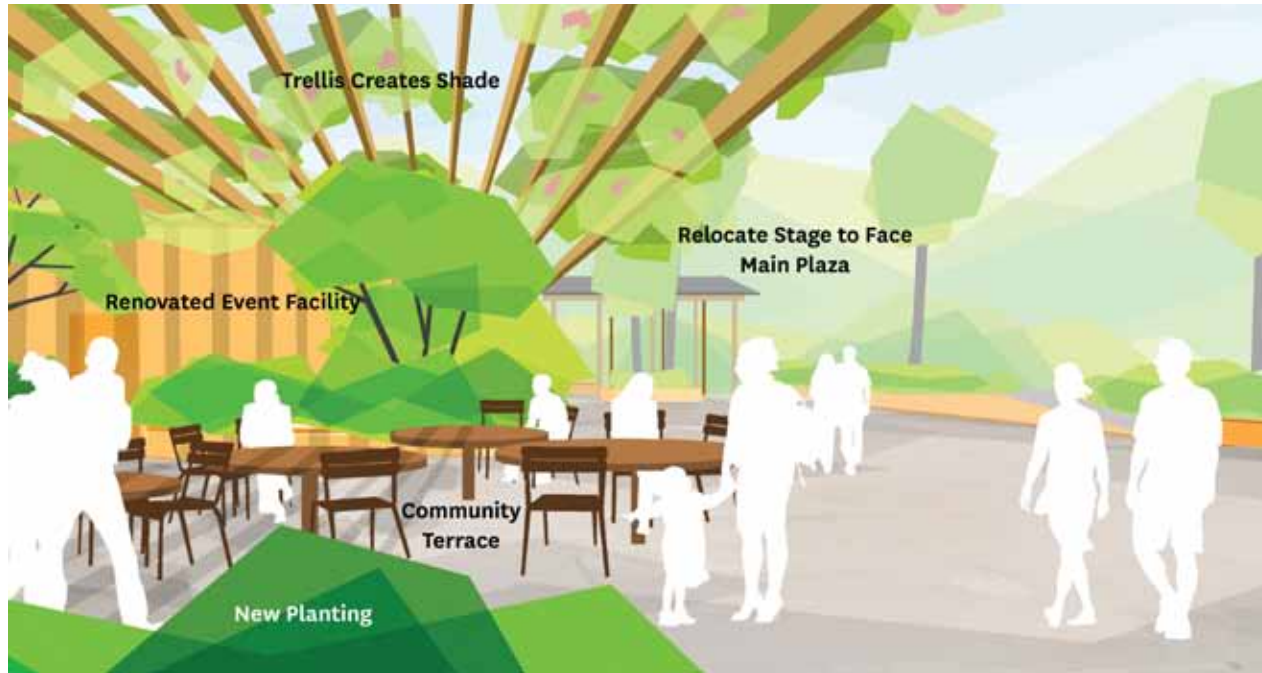


Figure 82.
Fiesta Gardens Community
Terrace Proposed View

A small community center could be introduced into the Fiesta Gardens Building with a terrace that could extend out under the shade of a new trellis structure, providing a comfortable outdoor space for community events and parties similar to the ones currently held here. The Mercado Buildings could be used for a similar purpose, supporting special events occurring either in the Plaza or in the nearby, relocated Degollado Pavilion.

The overall aim would be to make the buildings at Fiesta Gardens and the program that they accommodate much more accessible to the community and much better connected to the

surrounding park.

In the short-term the buildings could be opened to the public and used with minimal upgrades, but ultimately a major renovation or replacement of the buildings will be required as they are over 50 years old and in poor condition.

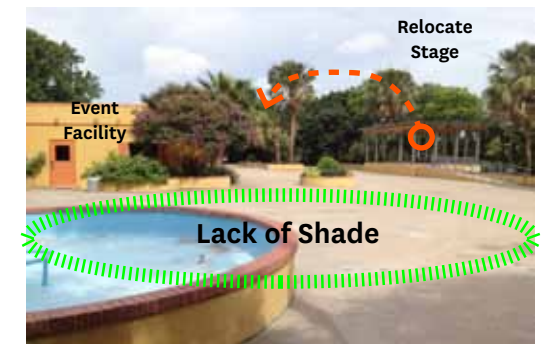


Figure 83.
Fiesta Gardens Terrace
Existing View

Shoreline Warehouses

Figure 84.
Shoreline Warehouses Proposed
Reuse Plan





Figure 85.
Shoreline Warehouses Partially
Opened Building Option View



Figure 86.
Shoreline Warehouses Fully
Opened Building Option View

The two existing metal warehouses, currently within the Holly Plant property, will occupy a prominent position on the edge of Lady Bird Lake in the future park, and will become a center of activity in this eastern area. These industrial structures appear to be in good condition and may be reused to serve a variety of park-compatible, community-related functions to be further studied.

The master plan proposes that the smaller, 4,000 square foot warehouse be a conditioned space that could house a cultural re-use (performance arts, museum, etc.), as well as provide new public rest rooms and a refreshment area.

The larger, 10,800 square foot

warehouse, located very close to the shoreline, is proposed to be opened up, with the walls of the southern third of the building opened up to create a large, shaded “porch” space, ideal for picnics, informal gathering, and for special events. The middle third of the space could also have the current metal walls removed and replaced with large sections of sliding or folding glass doors, and be partially conditioned.

Finally, the northern third of the building could be a fully conditioned space. The building could be an events rental space and even have small food trailers and/or a portable kitchen to serve such events.

The buildings will recall the industrial use of the site, while taking advantage of the dramatic natural setting overlooking the lake.

Figure 87.
Existing View of Shoreline
Warehouses



Either side of the shoreline warehouses are two interesting artifacts on the lake edge that recall the function of the Holly Plant. Both the water intake and outfall structures are massive reinforced concrete volumes that are built into the lake edge.

The master plan proposes taking advantage of the drama of the location and the particularities of these artifacts.

Over the intake structure the recommendation is to build a high level fishing pier and viewpoint over the lake, immediately next to the warehouse plaza

and close to the main bike and pedestrian trails. This could be a quiet place to seek respite from the city on a weekday morning, or full of people, perhaps even hosting a small event on the weekend.

Over the outfall structure the recommendation is to build a series of broad steps that lead down to the water's edge, creating a low-level terrace right on the water, a place to tie up your non-motorized craft and come up to the warehouse buildings.

Figure 88.
Water Intake Structure
Existing View



Figure 88.
Proposed Pier Over
Water Intake Structure

Views to Ladybird Lake



Fishing Pier and Viewpoint

**Access From
Ladybird Lake Trails**

Figure 89.
Existing Parking Spaces
Diagram



The master plan area has a total of 390 parking spaces distributed throughout the park in small lots, generally well located near many of the major facilities. Conversations with the community around parking focused on how to find the right balance between taking the pressure off the neighborhood by providing adequate spaces to discourage over-parking on adjacent streets, with the desire to avoid large parking lots that might encourage large events in the park.

The master plan approach to parking is to build upon the current strategy by providing small distributed lots close to the major park facilities, for a proposed total of 500 spaces.

Figure 90.
Proposed Parking Spaces
Diagram



500 Parking Spaces Proposed within Holly Shores

 Parking

Maintain the simple, tranquil character of the West Park

(Existing)

The West Park, between I35 and the Lagoon is the most pastoral part of Holly Shores, and the area that most people think of when talking about the peaceful nature of the existing park. The mix of evergreen and deciduous shade trees, including Pecan, Live Oak, and Post Oak, and open lawns create a popular place for family picnics and informal recreation. The dense shade under the trees and relatively heavy use of this area has led to sparse lawn cover in many areas and soil compaction typical of urban park lands.

The area around the Martin Pool is a particularly well used by the neighborhood. The playground, picnic shelter and open lawns are in need of renovation, and are well located near the Martin Middle School and its sports fields.

The area under I35 almost acts as a threshold for trail users as they walk, jog or bicycle from the west and enter Holly Shores. It is a space protected from the rain and sun, but with poor pathway connectivity, materials, and planting, it does not reflect its key position in the city.

LEGEND

1. **Parking Below I-35**
2. **Shade Trees & Lawns**
3. **Nash Hernandez Building**
4. **Parking**
5. **Playground**
6. **Ball Fields**



Figure 91.
West Park Existing
Conditions Plan

Maintain the simple, tranquil character of the West Park

(Proposed)

The areas of shade trees and lawn can be significantly improved in terms of habitat quality, ecological function and overall appearance with the removal of invasive species, soil amendment, native planting, thinning the tree canopy and small adjustments to the topography to collect and infiltrate stormwater. Native turf meadows and regulated mowing regimes will encourage species diversity and reduce water use.

Adding shade trees will improve the comfort of park facilities, especially around the Martin Pool. Improvements to the riparian habitat at the lake edge will help control erosion, filter sediment and pollutants carried in stormwater, support the health of the aquatic ecosystem, and provide flood control.

Improving the area under I35, with improved lighting, signage, clearly defined pedestrian, bicycle and vehicular areas, and a new fishing deck protecting the lake edge will create a welcoming threshold to Holly Shores, a place of orientation before entering the park.

LEGEND

- 1. Deck Under I-35 & Footbridge**
- 2. ADA Accessible Paths**
- 3. Retain Existing Shade Trees & Lawn**
- 4. 8'W Pedestrian Trail**
- 5. 11'W Bicycle Trail**
- 6. Nash Hernandez Building**
- 7. Food Forest**
- 8. Existing Parking**
- 9. Enhance Existing Park Facilities**
- 10. Boat Launch**
- 11. Enhance Lake Edge Habitat**



Figure 92.
West Park Proposed
Illustrative Plan

Figure 93.
Metz Pool Proposed
View



Figure 94.
Metz Pool Existing
View



The Martin Pool is a very popular neighborhood amenity in the park but is not well integrated into the surrounding landscape and can get uncomfortably hot in the summer.

The master plan proposes adding shade trees around the pool, as well as improving park facilities in the area, adding benches, picnic tables and shade structures, as well as water fountains, lighting and improvements to the changing facilities. A water-play area close to the pool could also be a

good complement to the pool, adjacent playground and picnic shelter. These kinds of improvements would support each other to make Martin Pool a much stronger focus of neighborhood activity for all ages.



Figure 95.
West Park Existing
Conditions Views

The combination of shade trees and extensive lawns makes the west park a comfortable place to enjoy the park, popular with families for picnicking, for runners and cyclists using the lake side trail, and for all types of passive recreation.

Dominant canopy species are Pecan, Live Oak and Post Oak, which have grown densely together, depriving the grass of enough light to grow in places. The resulting areas of bare earth have been compacted by foot traffic, restrict-

ing water and oxygen penetration into the soil.

The master plan proposes maintaining the general character of this area, and the degree of shading, but a combination of canopy thinning, limbing-up of low branches, soil decompaction, and liquid biological amendments will improve the health and resilience of the landscape.

Preserve,
Enhance Tree Canopy
and Wildlife Habitat



Figure 96.
Habitat Potential Plan
Diagram



Habitat Potential Legend:

- 1. Riparian Edge / Wetland
- 2. Open Upland
- 3. Wooded Upland
- 4. Permaculture & Gardens
- 5. Fields, Buildings, & Paving

Figure 97.
Existing Tree Canopy
Plan Diagram



27 acres existing tree canopy

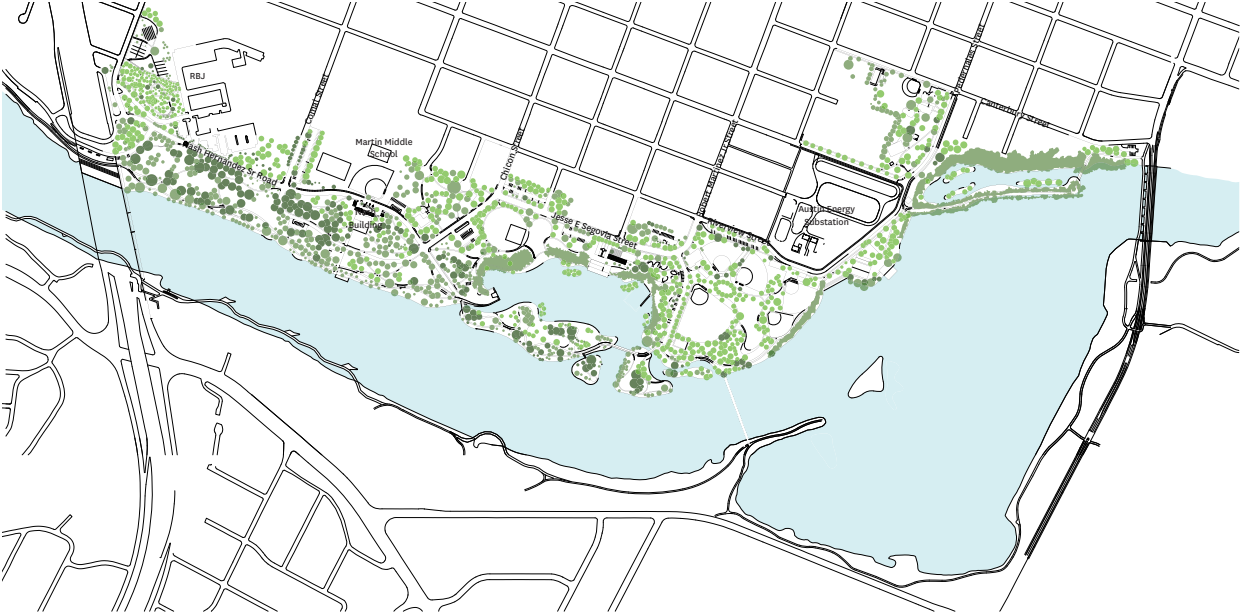
- Existing Deciduous Tree
- Existing Evergreen Tree

Vegetation in the park serves both to make a comfortable and inviting environment for people and a series of valuable habitats for wildlife. The Ecological Habitat Report by the Lady Bird Johnson Wildflower Center, appendix B in this master plan, describes the existing habitat types in the park, assesses their condition, and makes broad recommendations for habitat improvements within the broader goals of the master plan.

All of the five main habitat types found in the park can be improved, and one of the key requests of the community, to increase shade cover

in the park, can be provided while also improving habitat quality. The existing tree cover is approximately 27 acres, based on satellite data, and the master plan proposes increasing that number to approximately 44 acres. As with any of the master plan proposals the details of how to achieve this increase, while accommodating the broader master plan goals, should be assessed and refined during the individual design process for each implementation project.

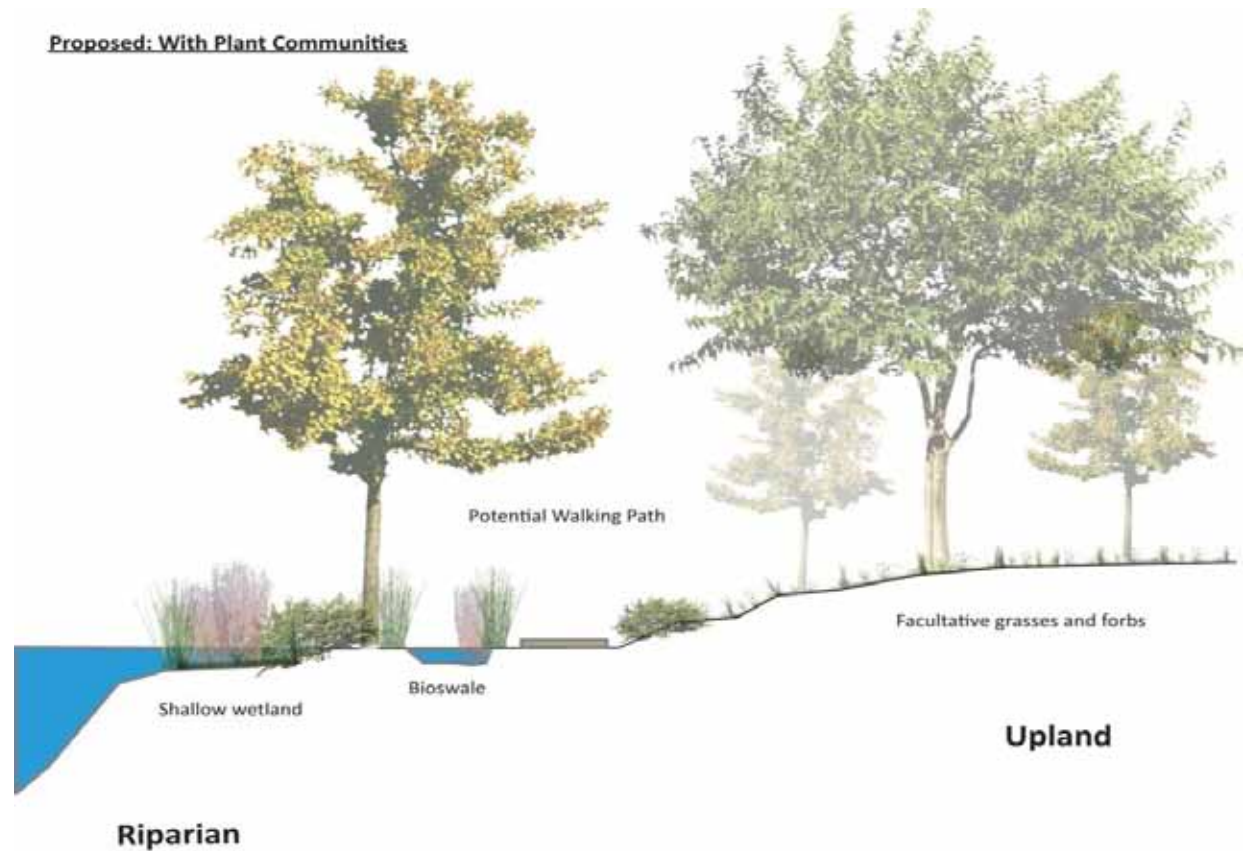
Figure 98.
Proposed Tree Canopy
Plan Diagram



44 acres tree canopy - combined proposed and existing trees

- Existing Deciduous Tree
- Existing Evergreen Tree
- Proposed Tree

Figure 99.
Proposed Plant
Communities



Riparian restoration, or restoration of the lake edge habitat, is an important element of the master plan proposal. Walking or canoeing at the water's edge in a peaceful park setting is a rare and valuable experience in this part of Texas, particularly in the city. The master plan seeks to find a balance between allowing people to experience this environment, and the protection and enhancement of the habitat.

In general, riparian vegetation is a major source of nutrients for aquatic communities and increase species

diversity in those communities. The master plan, in reshaping the edge of the lake in places, providing new channels to improve water quality in the lagoon and cooling pond, and creating habitat islands in those areas, will increase the current riparian habitat from over 15,000 to over 20,000 linear feet.

A healthy plant community in this area will help control erosion, filter sediment and pollutants carried in stormwater, provide flood control and create habitat. Increased native species diversity can be encouraged through the



Figure 100.
Proposed Riparian
Edge at Cooling Pond

selective removal of invasive species and the seeding or planting of native woody or herbaceous species. The primary goals should be improving bank stability and species diversity, which can be done either actively or passively. Passive establishment can be achieved through the elimination of invasive species and selective vegetation thinning; active establishment in areas that have little existing habitat involves new planting once bank stabilization has been achieved.

Figure 101.
Existing Riparian
Edge at Cooling Pond



Celebrate Local

Art & Heritage

Public art holds the unique capacity to creatively honor the heritage, culture, and landscape of an area in a way that is accessible to all citizens. In Spring 2013, GO collaborative was commissioned by the Austin Art in Public Places Program to develop a Public Art Action Plan for the Holly Shores Master Plan area. The goal for the Action Plan was to draw an overall picture for how public art could be implemented within the park as it develops over time.

GO collaborative set out to answer two essential questions about public art and its relationship to the surrounding community: 1. How is the community currently supported by the visual arts? 2. As the master plan is implemented, what should be the role of public art within the park? The communities that surround the park have a long tradition of the arts being integrated into their everyday life. From front yard shrines to expressive murals to original music, the surrounding neighborhoods hold their collective identity in large part through creative expression.

A number of goals for the public art within the park were identified: Tell the Story of the Neighborhood; Create Opportunities for Neighborhood Involvement; Continue the Legacy of a Vibrant Neighborhood Arts Culture; Honor Youth Culture and the Elders of the Community; Create Spaces of Delight for All.

The Public Art Action Plan for the Holly Shores Master Plan area document can be obtained from the City of Austin's Art in Public Places offices and in the website:

<http://austintexas.gov/page/holly-shoresedward-redone-st-park-festival-beach-master-plan-%E2%80%93-public-engagement>

Figure X.
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Appendix A

Park Programming, Funding, and Management Recommendations

INTRODUCTION

HR&A was engaged by Michael Van Valkenburgh Associates and McCann Adams Studio to advise on the development of a programming, funding, and governance strategy as part of the master planning process for Holly Shores/Edward Rendon Sr. Park (“the Park”) commissioned by the City of Austin Department of Parks and Recreation (PARC).

The Holly Shores/Edward Rendon Sr. Park Master Plan is a vision for revitalized open space that will integrate the redevelopment of the decommissioned Holly Street Power Plant site with existing open space to create a unified and accessible Park that reflects City and community goals. Currently, the accessible portions of the Park are used for informal gatherings, cultural and community events and performances, and daily recreation such as walking, jogging, fishing, boating, and play. However, levels of use are not consistent throughout the Park, with several areas that are inaccessible and underutilized by the community. There is also significant deferred maintenance throughout the Park that limits the quality of the Park experience and accessibility to people of all ages and levels of mobility.

The Master Plan will fulfill a wide range of program and usage needs for the community. The Park’s constituency is comprised of nearby residents in the Holly and East Cesar Chavez neighborhoods. These neighborhoods are also home to a burgeoning creative and artistic community. As such, Park programming should be tailored to serve the neighborhoods’ ongoing recreation needs and the artistic ambitions of the local community.

As part of the Master Plan, seven existing structures in the Park will be renovated and/or reprogrammed to serve Park users; the first portion of this memo describes HR&A’s preliminary evaluation of potential building reuse opportunities on site that complement the informal, community-oriented vision for the Park. To support this vision and serve the Park’s diverse user groups, HR&A recommends active, program-rich building uses based on preliminary market research and on feedback and program ideas from the community and design team.

The final portions of this memo describe a funding (operating and capital) and stewardship strategy for the Park that reflects the Master Plan design and program. It then delineates next steps to develop a stewardship structure that will ensure successful implementation of the Master Plan.

BUILDING REUSE OPPORTUNITIES

In keeping with the Master Plan vision, HR&A has recommended a range of community-serving and park-activating uses for the buildings. Principally, dedicated indoor and outdoor event spaces of varying size will continue to serve the neighborhood's rich cultural legacy as venues for community celebrations such as birthdays, quinceañeras, and the annual Cinco de Mayo celebration. At the same time, these venues will also serve as a much needed stage for the greater performing and visual arts communities in East Austin. Activating uses such as a visitor station, outdoor equipment rentals, and food concessions in smaller structures will support the Park experience.

These uses were identified in close consultation with the design team and the local community, through broad community meetings to solicit ideas as well as targeted interviews with event rental managers, public community event producers, and the performing and visual arts community to test the viability of these uses. Detailed explanations of the design and programming considerations for each building follow Figures 1 and 2.

Figure 1. Building Reuse Recommendations

Building	Size (SF)	Recommended Uses	Additional Uses Considered
Fiesta Gardens Mercado Buildings	5,200	Community use	N/A
Fiesta Gardens Event Rental Building	5,000	Community use / event rentals	N/A
Degollado Pavilion	12,200	Concerts/performance, outdoor event rentals	N/A
Small Warehouse	4,000	Community use, event rentals	Visual arts, performing arts, fitness classes, outdoor classroom, bike station, comfort station
Large Warehouse	11,800	Community use, event rentals	Fitness classes, performing arts, outdoor classroom, bike station, comfort station
Nash Building (COA PARD Facility)	10,000 – 12,000	Police offices, community meeting space, comfort station	Ranger building
Park Facility Building	TBD	Storage, recreation program support	N/A



Existing Structures Inventory

Structure	Identification	Description	Approximate Square Footage	Notes
A	COA PARD FACILITY	2-STORY BRICK BUILDING	10,000 - 12,000 SF	(to be confirmed)
B	DEGOLLADO PAVILION	1-STORY OPEN AIR STRUCTURE	12,200 SF	
C	FIESTA GARDENS MERCADO BUILDINGS	1-STORY CMU BUILDINGS	1,300 SF each	
D	FIESTA GARDENS EVENTS RENTAL BUILDING	1-STORY CMU BUILDING	2,500 SF	
E	SMALL WAREHOUSE	1-STORY METAL BUILDING	4,000SF	
F	LARGE WAREHOUSE	1-STORY METAL BUILDING WITH MEZZANINE	11,800SF	(not including mezzanine)



Figure 2. Map of Existing Structures

Fiesta Gardens Mercado Buildings

The Fiesta Gardens Mercado Buildings are two buildings of 2,600 SF each located north of the lagoon. Currently, the buildings are used for Park storage.

The Fiesta Gardens Mercado Buildings could serve as year-round community use supporting the new public activities around the lagoon. HR&A recommends programming both buildings with community activities to be decided in a process with neighborhood groups and city staff.

Physical provisions to ensure a successful and flexible community use. To ensure the successful operation of the facility, the building design should include a dedicated back-of-house area to support the function. The park should also provide plumbing and utilities for the facility.

Fiesta Gardens Event Rental Building

The Fiesta Gardens Event Rental Building is a single structure of 5,000 SF located adjacent to the Mercado Buildings at the north end of the lagoon. The building is currently used for small private event rentals such as quinceañeras and family reunions, with capacity for approximately 250-400 people.¹

The Fiesta Gardens Event Rental Building is currently fully booked and could continue to serve as a successful private event rental venue. According to PARD, there is sufficient demand for ongoing private event rentals of approximately 300-500 people in this venue.² It is currently booked on weekends (Friday-Sunday) up to six months in advance. Other uses considered for the building include public, community-serving programs such as lectures, community events, and school programs. These programs could activate the building area during off-peak rental times and provide a valuable community asset.

A renovated facility with new and enhanced amenities can generate more revenue. Specifically, upgrading the restrooms and providing improved facilities could support higher pricing, although pricing would have to be affordable and reflect the community use of the building. All comparable local venues HR&A surveyed feature attached or nearby restroom and kitchen facilities. Additionally, comparable park venues across the country with dedicated restroom and kitchen facilities earn higher rental rates than those without.

Degollado Pavilion

The Degollado Pavilion is an open-air structure of 12,200 SF located north-west of the lagoon. Currently, the pavilion is used for large public community events and performances, such as the annual Cinco de Mayo celebration and Pachanga Fest, a two-day Latin music festival. Due to parking and noise constraints at its current location, rental availability at the pavilion is determined by occupancy at the adjacent Fiesta Gardens venue; only one facility is allowed to operate at a time. Congestion will still remain an issue; The Pavilion and Fiesta Gardens will need to continue to determine rental availability in tandem.

The Degollado Pavilion could serve as a venue for public performances and private outdoor event rentals. According to local event producers and PARD staff, rental demand for community events and performances at the existing pavilion exceeds the facility's availability. There is also demand for large outdoor rental space (650-1,000 capacity) for private events such as weddings, reunions, and parties.³

A private operator could enhance occupancy and revenues. According to local event producers, PARD often requires producers to hold special permits from the City, a difficult process that restricts the type and frequency of events at current PARD-operated venues.⁴ Private operation of the pavilion may allow for more flexibility, increasing the earned revenues. Private operators may also have a more specialized understanding of the event rental market and be able to maximize bookings, and revenues, although the general desire of the neighborhood is for the pavilion to continue with a similar events program to the current one.

Stage infrastructure and access to restroom and kitchen facilities can increase occupancy and revenues. Few performance venues in Austin offer attractive, high-quality performance stage design; a well-designed stage and seating area at the renovated pavilion could increase demand and revenues. In addition, proximate restroom and kitchen facilities, or designated space for temporary facilities (e.g. catering trailers) with electrical/water access could increase user convenience and venue demand. The stage should be reconfigured to reduce noise carrying to the neighborhood.

Warehouses

The small and large warehouses are two buildings of 4,000 SF and 11,800 SF located in the former Holly Power Plant site. Until recently, the warehouses were used for power plant operations.

The small and large warehouses could serve as multi-use community and event spaces. The small warehouse could serve as a venue for community use and small private event rentals, and the large warehouse as a venue for community use and large private event rentals.

- According to local event facility managers and PARD staff, there is high demand for small indoor event venues (up to 400 person capacity) and moderate demand for large private event rental space (up to 1,000 person capacity).⁵
- According to interviews with the local visual arts community, there is demand for larger art gallery, studio, or class space with capacity of up to 1,000.⁶ The venue could serve local non-profit arts organizations such as Big Medium, and support existing arts spaces in East Austin such as the Pump Art Project Complex and the Up Collective.
- According to interviews with the local performing arts community, there is significant demand for small performing arts/rehearsal space with capacity of up to 100.⁷ A new dedicated performance venue could host local community acts as well as East Austin's thriving performing arts community, which includes companies such as VORTEX Repertory Company.

A private operator or dedicated talent recruitment staff could increase the quality and frequency of talent bookings. According to comparable small-scale theater operators across the country, existing contacts and networks result in up to 80% of talent bookings.⁸ Venues often employ dedicated booking staff with knowledge of specific performance genres. While these staff may increase the quality and frequency of programming, they also increase personnel expenses. An alternate option, which may be preferable to the Park constituency, is to have an East Austin-based resident performance company operate the venue, potentially in partnership with PARD or a nonprofit Park steward. The company would be responsible for programming and revenue generation in return for prioritized use of the space.⁹ Further outreach to local performance companies would be required to determine the feasibility of this management approach and identify potential candidates.

Outdoor recreational opportunities in and around the warehouses can further activate the Park. Community-serving outdoor uses, such as yoga and fitness classes, outdoor classrooms for school and community groups, bike stations, and a comfort station for trail users offering restrooms, water, and shade, could complement performing and visual arts programs at the warehouses, and increase activity at the eastern end of the Park.

Flexible interior design and exterior weatherproofing can increase frequency of use. Conversations with local and national performing arts communities indicate that successful multi-use venues feature modular, easily modifiable components.¹⁰ Use of a blackbox theater design with moveable seating in the small warehouse could potentially maximize customization of the space. For the large warehouse, which may become an open-air structure, permanent infrastructural components such as sliding walls should be incorporated to facilitate adaptation to changing weather conditions and allow for extended use.

Nash Building (COA PARD Facility)

The Nash building is a two story, 10,000-12,000 SF structure located west of Festival Beach. Currently, the building is under renovation in preparation for use by the PARD Aquatic Administration Offices and the Park's Bikes Patrol. It has also been considered for a variety of additional City offices.

Community-serving uses, such as dedicated meeting space, community dining, and comfort station, should be incorporated into the facility. Although the Nash building has been reserved for office use by the Austin Police Department, HR&A recommends that a dedicated portion of the building be used for community-serving uses, such as a community meeting space, community kitchen and dining, public restrooms, a visitor desk, a shared outdoor porch, outdoor bulletins and displays, and/or office space for the recommended park stewardship organization, described below. Additionally, there may be potential to implement permaculture projects on either the roof of the building or along the adjacent driveway.

Park Facility Building

The park facility building is located west of the small and large warehouses.

A facility building can offer recreation-supportive facilities, such as recreational storage and public restrooms. A flexible, recreation support facility can increase the efficiency of recreational programs at the Park, including the baseball program, and improve user experience.

OPERATIONS & MAINTENANCE FUNDING APPROACH

Operations & Maintenance Costs

HR&A estimates operations and maintenance costs for this project on the order of \$10,000 to \$20,000 per acre (\$1 million to \$2 million for the entire site), plus additional programming costs, based on costs for comparable large-scale neighborhood destinations with high maintenance standards and moderate levels of programming.¹⁷ Current park operations and maintenance spending city-wide is approximately \$1,180 per acre, which is likely below existing Holly Shores spending due to the abundance of unprogrammed natural areas in the Austin park system. Nonetheless, HR&A expects that this will represent a significant increase in spending. Actual operations and maintenance costs will reflect the details of the Master Plan, the ambitions for programming, and the management structure chosen for the Park. In addition, any supplementary functions not administered by PARD may require additional overhead costs.

Baseline City Funding

Following Master Plan improvements, HR&A recommends an increase in PARD's operations and maintenance spending to reflect an increase in the total acreage served and in the quality of the Park. Capital funding is typically easier to acquire than operations and maintenance funding; as a result, it may prove worthwhile to dedicate an endowment or reserve as a part of the capital funding package to support operations and maintenance.

Downtown Parks District

A revitalized Downtown Parks District may generate revenues to support the Park. The January 2010 Downtown Austin Plan recommends the formation of a Downtown Parks District, which could generate Park-specific assessment revenues to support operations and maintenance of downtown parks. If plans for the District progress, it would be advantageous to the Park to be included in the District so that it can draw on funding resources from Downtown.

Earned Income

Earned income from the reprogramming of existing structures at the Park may generate additional revenues to support Park operations. As discussed above, the Park may be able to offer private event rentals, performances, visual and theater arts spaces to its users within its existing structures. These uses may potentially generate revenues to support community programming and special maintenance projects at the Park.

Individual Contributions and Memberships

In addition to supporting capital campaigns, individual contributions could generate annual revenue for Park operations and maintenance if solicited by an active and sophisticated fundraising organization. Successful organizations across the country help to support cherished Parks in neighborhoods comparable to East Austin and are helpful precedents for the Park (see Stewardship Section).

CAPITAL FUNDING APPROACH

Capital Costs

The anticipated total capital costs are approximately \$64 million for implementation of the Master Plan, with a design contingency of 25% bringing the figure to approximately \$80 million.

City Bond Election

Though bond financing is the most common funding source for capital investments of this scale, the recently approved bond offers limited support for the Master Plan. In Austin, park capital investments are primarily funded through General Obligation bonds issued approximately every five years. The \$307 million bond approved in November 2012 contains \$2.5 million for the Master Plan as part of \$9.5 million reserved for metropolitan parks. The bond also includes \$11.5 million in "program level funding" that has yet to be officially allocated to specific parks, but according to PARD staff, that funding is likely already overcommitted and largely unavailable for Master Plan implementation. An increased allocation from the 2012 bond is unlikely; PARD projects tend to be entirely dependent on City land and funding, limiting the potential for use of unspent funds, and the current bond allocations reflect current City priorities, limiting the likelihood of reallocating funds from another project in need.

A clearly-visioned Master Plan may generate strong community support and shift Holly Shores to a top bond funding priority, generating significant resources for the Park. The highest-funded park projects in the 2012 bond election will receive approximately \$10 million each. A strongly supported Master Plan may garner comparable allocations in upcoming bond elections.¹⁸

City Departmental Partnerships

If Park plans are aligned with goals for other city departments, there may be opportunities for collaborative funding of capital projects within the Park. This could include support from the Austin Water Utility for any wetland restoration or storm water mitigation included in the Master Plan and/or partnerships with potential programming partners, such as the schools, the Dougherty Art Center, and other city departments.

Parkland Dedication Fees

In tandem with City Bond Financing, Parkland Dedication (PLD) fees can provide supplemental support for capital investments in the Master Plan area. New development within the city is subject to a \$643 per unit parkland dedication fee that supports PARD's capital projects. PLD funds are collected from developers at the time that projects are permitted and are shifted to a fund that supports capital projects as the need arises. In general, funding priority is given to the closest neighborhood parks within one mile of the development site, followed by district parks within two miles of the development site, followed by metropolitan parks citywide.

There are nearly \$500,000 in unspent PLD funds from developments within one mile of Holly Shores/Festival Beach that could be immediately allocated to Master Plan capital costs. Future funds from new development near the Park can also support capital funding. Over the past 10 years, approximately \$150,000 in PLD fees per year have been generated within one mile of the Park. However, many park projects compete for these funds. PARD allocates PLD funding between competing projects based on departmental priorities and on relative benefits to the affiliated housing developments.

River District Tax Revenues

If desired, the community and/or watershed region could pursue bond financing for Master Plan Improvements. The State of Texas Water Code authorizes river districts to pursue bond financing for river-oriented public improvements within their boundaries, including parks.

Texas Parks and Wildlife

Though the State of Texas offers little funding for city park projects, there may be small opportunities related to specific grant programs. For example, the Texas Parks and Wildlife Department (TPWD) offers an Outdoor Recreation Grant program that provides matching grants for outdoor recreation investments; however, only municipalities with fewer than 500,000 residents are eligible for this program, and grants are capped at \$100,000. Given the small scale of this program and similar opportunities, as well as limited feasibility of obtaining State funding for projects in Austin, HR&A recommends that the future stewards of the park advocate for access to State funding as part of a broader fundraising strategy.

U.S. Environmental Protection Agency

Federal funding may be available to support Master Plan implementation, and PARD has explored preliminary opportunities for partnership with the U.S. Environmental Protection Agency (EPA). The EPA has contacted PARD regarding the Master Plan site and has explored potential brownfield remediation funding for the site. However, because the majority of the site has been active parkland for decades, and the Holly Shores Power Plant portion of the site has been remediated by Austin Energy, HR&A believes this is an unlikely source of funding.

Philanthropic Grants

With a proactive, goal-oriented fundraising strategy, park supporters may be able to receive grant funding from a range of national and regional organizations. Park goals include providing places for active recreation and outdoor enjoyment for a diverse group of users; preserving and enhancing natural resources; promoting Latino culture and the arts; and enhancing connectivity in a city-wide bike and pedestrian network. Potential partners in achieving these goals could include organizations like the Robert Wood Johnson Foundation, the Trust for Public Land, Hispanics in Philanthropy, and the National Resource Defense Council.

In addition, there are a variety of local organizations that could support the Park's construction. These include:

- **The Trail Foundation**, which recently raised \$2.5 million over and above the aims of its capital campaign. While the foundation is likely to spend those funds on trails along the southeastern portion of Lady Bird Lake, future trail improvements and bike/pedestrian connections, including a potential footbridge or improvements to the Longhorn Dam, could be funded in partnership with the Trail Foundation.
- **The Tejano Trail Standing Subcommittee of the East Cesar Chavez Neighborhood Planning Council**, which was recently awarded “National Recreation Trail” status for the Tejano trails by the National Park Service (NPS), qualifying it for financial assistance from the NPS. As a result, capital investments in the portions to the Tejano Legends trail and its public art network that overlap with the Master Plan site could be funded by the NPS via the Tejano Trail Standing Subcommittee.
- **Austin Parks Foundation**, which is PARD's charitable partner and provides small-scale capital grants to parks across the city and spends \$1.6 million annually on its park-supportive programs. The Master Plan site is a prime contender for these grants.

The amount of funding available to support the park will depend on the strength of local advocates for the park and the availability of philanthropic funding due to economic conditions at the time of fundraising.

Individual Contributions

While individual fundraising will be critical to generate local support for the Park, it should not be regarded as a major source of funding. Individual contributions for capital funding are most effective in neighborhoods with high household wealth or in Park projects that serve a city-wide or metropolitan constituency. With a median household income of \$33,300 within a half mile of the Park's center¹⁹ and a stated ambition not to create a destination park, this project is unlikely to attract significant individual philanthropy from the local neighborhood or the broader metropolitan community.

STEWARDSHIP & PARTNERSHIPS

To ensure the successful implementation of the Master Plan, future Park management must integrate the strengths of the range of existing supporters. Currently, the Park site is supported by a broad constituency of users, local residents and organizations, PARD and City staff, and other city stakeholders including the Austin Parks Foundation. In order to build upon the strengths of these existing groups to form an effective stewardship strategy, the Park may expand the capacity of an existing organization, create partnerships that leverage the strengths of existing organizations, and/or create a new organization that serves the required functions. The most effective stewardship for the Park will integrate:

- PARD capacity and funding for Park construction and operations;
- Advocacy, volunteerism, and general support from the local neighborhoods;
- Community-serving programming provided by a range of partners; and
- A private entity to solicit and retain philanthropic contributions and/or earned income.

The Park must be supported by a capable entity to oversee operations and maintenance and manage Park-earned income; PARD is the most likely candidate. A capable management and maintenance entity is necessary to uphold the landscape standards outlined in the Master Plan. Typically, public partners provide management and operations and maintenance capacities. Because the anticipated quality of the landscape requires dedicated, but not necessarily private management, PARD is likely the appropriate steward for the Park.

Earned income generated within the Park should be used to support the Park's operations and maintenance, programming, and/or capital projects. Often, there are administrative challenges to restricting earned income to use in a specific park. To overcome this challenge, PARD may want to engage a private, nonprofit partner through which to funnel these revenues.

A private, nonprofit Park partner could support also programming, volunteer coordination, advocacy, and fundraising at the Park. Nationwide, private, non-profit Park stewards assist public management organizations, such as PARD, in providing programming, volunteer coordination, fundraising, and advocacy (see Figure 4). While these organizations are typically formed in response to park challenges, the successful implementation of the Master Plan will require engaged private stewardship from the outset.

Figure 4. Comparative Analysis of Public-Private Partnerships at Comparable Parks

Organization	City	Management and O&M	Programming	Fundraising	Volunteerism	Advocacy / Planning
Garfield Park Conservatory Alliance	Indianapolis, IN		✓	✓	✓	✓
Franklin Park Coalition	Boston, MA		✓	✓	✓	✓
Brackenridge Park Conservancy	San Antonio, TX		✓	✓	✓	✓
Belle Isle Conservancy	Detroit, MI			✓		✓
Branch Brook Park Alliance	Newark, NJ		✓	✓	✓	✓

Note: Comparison set based on parks with comparable socioeconomic context and location relative to downtown; comparable operating budgets to the expected earned and philanthropic revenues for the Park; comparable park program, configuration, and size; and location in a comparable size, region, and/or density city.

HR&A recommends that the Park constituency, Austin park advocates, and PARD incubate a Park stewardship organization in the near term. Small park stewardship nonprofits often benefit from partnerships with a range of public organizations and umbrella nonprofits.²⁰ For example, the Friends of Collier Heights Park in Atlanta, GA is a small community organization that partners with Park Pride, Atlanta’s citywide park advocacy organization, for all of its major programming and capital investment initiatives. The private Park steward could benefit from a partnership with local public organizations or umbrella nonprofits. Potential partners that may provide technical assistance or funding support for the Park’s private steward include:

- Austin Parks Foundation, which is Austin’s umbrella park advocacy organization. The Foundation has expressed interest in supporting the formation and operations of a local private steward (“Park Advocacy Group”) for the Park. The Foundation typically assists stewards under its umbrella through outreach resources, volunteer recruitment, financial management, and offers access to a dedicated grants program and sponsored funds accounts.
- Austin Creative Alliance and other nonprofit programming partners; and
- ECC Neighborhood Planning Council and other neighborhood planning and cultural organizations.

¹ The 250-400 capacity range describes seated (low) and standing (high) capacity. HR&A assumed a SF loss factor of 20%, based on current spatial allocation at Fiesta Gardens and our experience in national markets, and an allowance of 10 SF per person standing and 15 SF per person seated, based on local venues and industry standards in New York, NY and Ottawa, Canada.

² Interview with Sonia Freeland, PARD Reservations, April 4, 2013.

³ The 650-1,000 capacity range describes seated (low) and standing (high) capacity. HR&A assumed a SF loss factor of 20%, based on current spatial allocation at Fiesta Gardens and our experience in national markets, and an allowance of 10 SF per person standing and 15 SF per person seated, based on local venues and industry standards in New York, NY and Ottawa, Canada.

⁴ Interview with Dean Lofton, Dean Lofton PR, April 3, 2013.

⁵ Interview with Sonia Freeland, PARD Reservations, April 4, 2013.

⁶ Interview with Laura Esparza, Dougherty Arts Center, August 20, 2012.

⁷ Interview with Anne-Marie McKaskle and Heather Barfield, Austin Creative Alliance, March 28, 2013.

⁸ Interview with Henry Hoagland, One Longfellow Square, April 2, 2013.

⁹ Interview with Anne-Marie McKaskle and Heather Barfield, Austin Creative Alliance, March 28, 2013.

¹⁰ Interview with Henry Hoagland, One Longfellow Square, April 2, 2013; interview with Anne-Marie McKaskle and Heather Barfield, Austin Creative Alliance, March 28, 2013.

¹¹ Prospect Park (Brooklyn, NY), and City of Seattle metropolitan Parks.

¹² Average triple net retail rents in East Austin are \$25/SF. HR&A applied this rate to the projected 2,000SF useable area of the Mercado Buildings to obtain yearly rental revenues. HR&A assumed a SF loss factor of 20%, based on current spatial allocation at Fiesta Gardens and our experience in national markets.

¹³ Revenues are based on a projected rental rate of approximately \$3,500 per event, at approximately 35-45 rentals per year. The projected event frequency assumes 1-2 rentals per week during the 5 months of high season (March, April, May, September, October), and 2 events per month during the remaining 7 months of the year. Projected event frequency accounts for availability co-sharing with events at the Delgollado Pavilion. HR&A assumed operating expenses of 60%, per our research in national markets.

¹⁴ HR&A projected a rental rate of \$1,000 per performance, and a frequency of 10-15 rentals per year. HR&A assumed operating expenses of 60%, per our research in national markets.

¹⁵ The national market rate for outdoor rentals is approximately \$4 per person. HR&A projected a rental rate of \$4,400 per private event, and assumed that the Park will be able to support 30-40 events per year. HR&A assumed operating expenses of 60%, per our research in national markets.

¹⁶ Interview with Anne-Marie McKaskle and Heather Barfield, Austin Creative Alliance, March 28, 2013. Based on rental rates at comparable theater venues, the small warehouse may be able to charge \$500 per weekend performance and \$10 per hour for rehearsals.

¹⁷ Interview with Laura Esparza, Dougherty Arts Center, August 20, 2012.

¹⁸ Based on three to four additional bond elections in the next 20 years.

¹⁹ ESRI Business Analyst, 2010.

²⁰ Ibid.

Appendix B

Ecological Habitat Report



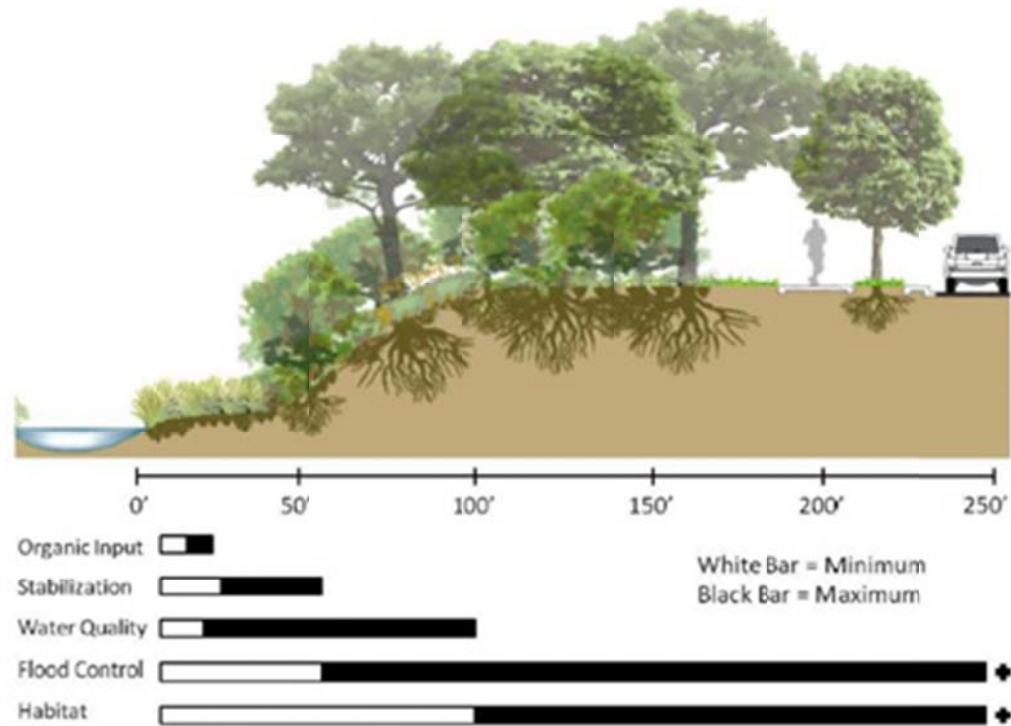
Introduction

As part of the Holly Shores Master Plan, this report functions to provide an ecological context to the site. The report's ecological discussion is at the Master Plan level and a more detailed assessment will be needed as the project progresses beyond the Master Plan phase. In this document there is a general discussion regarding riparian function, historical site conditions, current conditions, and opportunities for preserving or enhancing ecological function. While it was found that the current conditions were limited in terms of ecological function due to compaction and invasive species it was also realized that the park has multiple opportunities to increase ecological function and enhance the park experience simultaneously. Furthermore, by restoring riparian function Holly Shores could become a rare example of an urban wetland park within the United States, especially if linked to restoration actions with the Waller Creek project. Viewing the park as part of a larger riparian system by connecting and improving multiple project sites strengthens the strategies suggested below in this report and more importantly the City of Austin's overall ecological health. This project presents an opportunity to act as a model and educational tool for urban ecology to both the park users and community at large, if not the country.

Central Texas Riparian Ecosystems

Twenty percent of bottomland forest ecosystems have been lost in the southern states since 1950 (Kellison and Young 1997 as cited in Holcomb 2001); and by 1986, over one-half million acres have been inundated by reservoirs in Texas (McMahan 1986 as cited in Holcomb 2001). The diversity of plant and animal species found in functioning bottomland forests is unparalleled among other ecosystem types throughout the lower 48 United States (Kellison and Young 1997 as cited in Holcomb 2001). It is important to understand that this species richness and diversity resulted from the convergence of wetland and upland associations. In fact, the U.S. Army Corps of Engineers (COE), the Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (USFWS), and the Soil Conservation Service

(SCS) have expanded their wetland definition criteria to include bottomland hardwood forests (Kellison and Young 1997 as cited in Holcomb 2001).



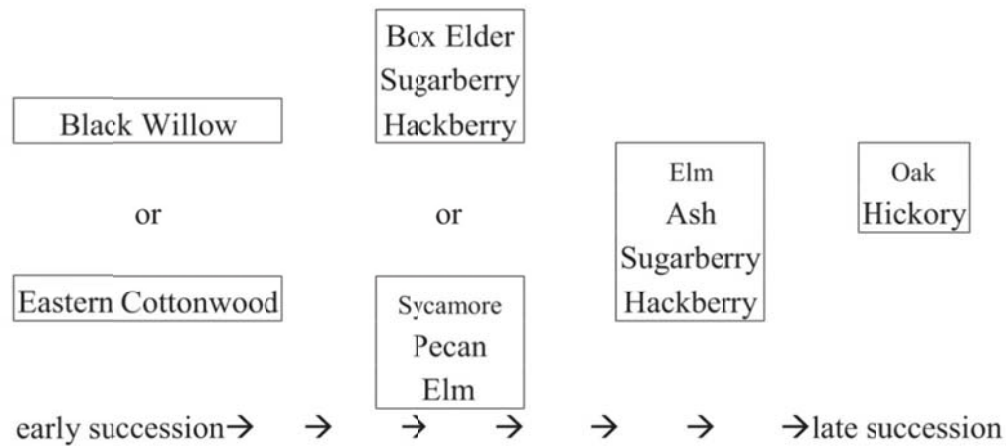
Source: City of Austin, Watershed Protection Department. Riparian Zone Restoration. This image above shows the various buffer widths associated with riparian zone function. Organic inputs into the stream are important sources of nutrients and habitat (width 15-25 ft). Stream stabilization is maintained by riparian vegetation (width 30-60 ft). Water quality is the ability of the vegetation to intercept runoff, retain sediments, remove pollutants, and promote groundwater recharge (width 20-100 ft). Flood control is the ability for the floodplain to intercept water and reduce peak flows (width 60- 500 ft). Riparian habitat is the ability of the buffer to support diverse vegetation and provide food and shelter for riparian and aquatic wildlife (width 100-1500 ft) .

The health of Texas' rivers, streams, and creeks are important contributors to the overall environmental and human health of urban areas. Many of these ecosystems are threatened by non-point pollution, invasive plant growth, degraded/paved watersheds, and the channelization of streams, thus impacting or eliminating beneficial ecosystem services (Allan et al. 1997, Strayer et al. 2003, Townsend et al. 2003). Riparian areas perform essential hydrological and biological functions, including flood control, surface water storage, ground water supply recharge, and biological diversity (Dickson 1989, Gregory 1991, Williams et al. 1997). Vegetation in riparian corridors act as a filter trapping sediment, organics, excess nutrients, and pollutants from parking lots, roads, residences, and commercial lot surface runoff, improving water quality (Lowrance et al. 1984, Henley et al. 2000).

Riparian areas are complex ecosystems that contain vital habitat for numerous species. The vegetation not only prevents erosion, but also provides food (Halls 1973), cover (Burk et al. 1990, Halls 1973), and breeding habitat for bird, amphibian, mammal (Dickson and Huntley 1987), fish and reptile species (Rudolph and Dickson 1990, Brode and Bury 1984). Trees (snags), branches, and leaves falling from riparian edges into the water provide habitat for aquatic organisms (Maser and Sedell 1994). Removal of this cover results in a reduction in biodiversity and landscape performance.

Riparian Canopy

Central Texas has recorded some of the most intense rainfall in the world with some singular events depositing over 40" (Guadalupe- Blanco River Authority 2011), however, this region also experiences extended periods of drought. This climatic dichotomy results in a unique system that results in a topography that includes floodplain and terraces formed from older floodplains (Wharton et al., 1982 as cited in Holcomb 2001). Forests in the floodplain are subject to flooding and the accompanying sediment deposition (Hodges, 1997 as cited in Holcomb 2001). The profile of these areas is characterized by a series of small ridges, flats, and sloughs, which influence water retention, sediment deposition, and soil texture (Hodges, 1997 as cited in Holcomb 2001). Species composition also varies with the topography as you move from mid river to upland (Holcomb 2001). Typical riparian species include willows and cottonwoods on the riverbanks; less water tolerant species (e.g. elm, pecan, and sugarberry) growing on the ridges; facultative wetland species (e.g. bald cypress, American sycamore) in the sloughs; and mixtures of both types, as well as facultative upland species (e.g. green ash) on the flats (Hodges, 1997 as cited in Holcomb 2001). Three types of dominant overstory plant communities can characterize the of the limestone-dominated Central Texas/Edwards Plateau region: bald cypress and sycamore; pecan and hackberry; and hackberry and elm. (Wagner 2003).



Source: Holcomb 2001. Example of canopy tree succession in central Texas riparian bottomland

A Majority of the Holly Shores Festival Beach site possessed an open savanna that had a 20- to 25-percent canopy of elm, live oak, hackberry, and pecan trees (USDA Soil Survey 1974). This would translate into 2-3 large canopy trees per acre or clumps of smaller trees within a grassland dominant matrix. This matrix would likely include Bottomland Range Site and Blackland Prairie species, but would also include some Edwards Plateau flora. These species are considered upland associations and although they are not directly affected by the hydrological conditions, they did act as important sources of organic matter for wetlands and helped create microclimates for habitat, and therefore should be considered part of the riparian system (Miller et. Al. 2009, Gregory et al. 1991).

Bottomland Range Site

According to the 1974 USDA Soil Survey the Holly Shores site adjacent to the river originally physically existed as narrow bands along streams with gravel deposits and exposed limestone beds. Boulders were randomly interspersed among alluvial lands and the soil content was calcareous and loamy. The site received extra runoff from the higher lying areas. Because it was near water, this site had an abundance of large trees (USDA Soil Survey 1974).

In a mature state the site consisted of little bluestem (*Schizachyrium scoparium*), switchgrass (*Panicum virgatum*), indiangrass (*Sorghastrum nutans*), rustyseed paspalum (*Paspalum langei*), and beaked panicum (*Panicum anceps*). Big bluestem (*Andropogon gerardii*), and eastern gamagrass (*Tripsacum dactyloides*) occurred in lesser amounts; other species on the site were meadow dropseed (*Sporobolus compositus* var. *drummondii*), side-oats grama (*Bouteloua curtipendula*), bushy bluestem (*Andropogon glomeratus*), vinemesquite (*Panicum obtusum*), buffalograss (*Bouteloua dactyloides*), and climax forbs (USDA Soil Survey 1974). Virginia wildrye (*Elymus virginicus*), texas wintergrass (*Nassella leucotricha*), Indigo bush (*Psoralea argemone*), Creek sedge (*Carex blanda*), Inland sea oats (*Chasmanthium latifolium*), Blue mistflower (*Conoclinium coelestinum*), Texas frogfruit (*Phyla nodiflora*), Dwarf palmetto (*Sabal minor*), Mexican plum (*Prunus mexicana*), Spring obedient plant (*Physostegia intermedia*), Turk's cap (*Malvastrum arboreum* var. *drummondii*), Common buttonbush (*Cephalanthus occidentalis*), and Green dragon (*Arisaema dracontium*) were some common understory species.

As the range condition declined, the site was dominated by three-awns (*Aristida* spp.), Texas grama (*Bouteloua rigidiseta*), ragweed (*Ambrosia artemisiifolia*), snow-on-the-mountain (*Euphorbia marginata*), prairie coneflower (*Ratibida columnifera*), white crownbeard (*Verbesina virginica*), broomweed (*Amphiachyris dracunculoides*), croton (*Croton texensis*), mesquite (*Prosopis glandulosa*), and other woody plants (USDA Soil Survey 1974).

However, Holly Shores Fiesta Park is currently located amid urban soils. The original soils developed in limestone, chalk, and alluvium, but now this urban land is occupied by individual dwellings and adjoining streets, driveways, sidewalks, and paved parking lots. These construction activities have most likely altered soil features that they no longer resemble soils described in the various USDA soil series (USDA Soil Survey 1974). In urban land conditions it is critical to take soil samples to evaluate the current health of the existing soils, how closely they resemble the historical soil descriptions, and what actions are needed to improve the soil health. It is possible that there are areas of relatively healthy soil; the LBJWC has found this to be the case on some urban ecology restoration projects. In addition, the Colorado river's dynamic processes in this location have been reduced and limited due to the system of dams. This has impacted the characteristics of current and potential vegetative communities on site and will result in some ecological differences from the historical riparian system. Though referring to the historical condition is a foundation to understanding the site's ecology and informs the proposed conditions discussed later in this report.

Texas Blackland Prairie

The Northern Blackland Prairie subdivision of the Texas Blackland Prairie ecoregion is a disjunct ecological region distinct from neighboring regions due to its fine-textured, clayey soils and predominantly prairie potential natural vegetation. Most of the prairie has been converted to cropland, non-native pasture, and sprawling urban and industrial uses around Dallas, Waco, Austin, and San Antonio. Less than one percent of the original vegetation still exists, dispersed throughout the region in small parcels (Griffith, G.E., et. al., 2004).

The rolling plains of the Northern Blackland Prairie subregion possess soils that are mostly fine-textured, dark, calcareous, and productive clays. Historically, the dominant vegetation of the area was little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), indiagrass (*Sorghastrum nutans*), and tall dropseed (*Sporobolus compositus* var. *compositus*). The most common forbs were asters, prairie clovers (*Dalea* spp.), and black-eyed susan (*Rudbeckia hirta*). In lowlands and mesic zones, dominant grasses were eastern gamagrass (*Tripsacum dactyloides*) and switchgrass (*Panicum virgatum*). Stream bottoms were wooded with bur oak (*Quercus macrocarpa*), Shumard oak (*Quercus shumardii*), sugar hackberry (*Celtis laevigata*), elm (*Ulmus* spp.), Texas ash (*Fraxinus albicans*), eastern cottonwood (*Populus deltoids*), and pecan (*Carya illinoensis*) (Griffith, G.E., et. al., 2004).

Wetland

Texas wetlands are some of the state's most endangered ecosystems and are characterized by permanent/semi-permanent water, oxygen poor soils, and obligate plant species adapted living in wet environments (TXPWD 2003). Central Texas wetlands included flooded woodlands, river's edges, spring fed pools and seeps. The Holly shores site currently possesses no springs so any flooded woodland or interior pools would have been ephemeral in nature and vegetation would vary depending upon current climatic conditions, however, it is likely that there would have been seeps along parts of the site that would have allowed obligate wetland species to thrive. Certainly there would have been edges along the Colorado River that would have remained wet providing vital habitat for many species. The historical soil surveys do not provide sufficient data about specific wetland conditions on the Holly Shores site so information regarding potential habitat and geomorphological conditions has been derived from contextual wetland associations. The common feature of functioning wetland ecosystems is the variability of terrain and water depth.

Common wetland species for the site would have been water knotweed (*Polygonum amphibium*), buttonbush (*Cephalanthus occidentalis*), black willow (*Salix nigra*), marsh purslane (*Ludwigia palustris*), water pennywort (*Hydrocotyle ranunculoides*), cattail (*Typha domingensis*), bushy bluestem (*Andropogon glomeratus*), Scouringrush horsetail (*Equisetum hyemale*), Crimsoneyed rosemallow (*Hibiscus moscheutos*), Zigzag iris (*Iris brevicaulis*), Virginia iris (*Iris virginica*), Cardinal flower (*Lobelia cardinalis*), Bigfoot water clover (*Marsilea macropoda*), Nimblewill (*Muhlenbergia schreberi*), American white waterlily (*Nymphaea odorata*), Lanceleaf Arrowhead (*Sagittaria lancifolia*), and Common elderberry (*Sambucus nigra ssp. Canadensis*).





Palmetto State Park. Gonzalez, Texas.

Current Conditions

Current habitat zones in the park are results of manmade influences. The Colorado River's hydrology has been altered so that it functions more similarly to a lake with higher water levels and consistent flow. This has created a vegetated edge that consists of areas dominated by obligate and facultative wetland species. The rest of the site we are classifying as upland consists of facultative upland species. Invasive plants are dominant in both areas except for full shade areas where the prevalent characteristic is a dense woodland community with significant canopy coverage and a complete lack of understory vegetation resulting in exposed soils and significant erosion. A large amount of erosion is due to runoff from the park's roads and parking lots as well as soil compaction from park users. From a maintenance standpoint, the canopy and grass areas (zone 2) have been viewed as separate elements from the water's edge (zone 1) and this has adversely impacted the beneficial landscape functions typically associated with riparian corridors and wetlands. The quality of the park's habitat and ecosystem services can be improved if the future design incorporates the entire landscape as one system.



Upland Association 
Riparian Edge/Wetland 

Upland Area

The upland area can be characterized by areas of shade trees mostly planted with numerous sized planted turf areas. The historical savanna or prairie condition has been replaced by some natural woody encroachment but primarily a planting of typical park shade tree species and turf grasses. Dominant canopy tree species are Pecan (*Carya illinoensis*), Live Oak (*Quercus virginiana*), and Post Oak (*Quercus stellata*). In areas of full shade there are many areas where ground cover could not sustain the lack of light leaving bare soil although places with intermittent light have primarily Horseherb (*Calypocarpus vialis*) coverage. The understory grasses are dominated primarily by Common Bermuda grass (*Cynodon dactylon*). Bermudagrass is now considered an invasive grass by the City of Austin although has been commonly used in park conditions. Improved hybrids of Bermuda grass such as Tifgreen, Tifdwarf, Tifway and Santa Ana are used in those applications as these hybrid varieties do not produce seed, whereas common bermudagrass produces seeds that remain viable in soil for at least 2 years (see Zone 3). Another invasive grass common to these locations is crabgrass (*Digitaria spp.*). The soils in these areas are poor and compacted and also generally lack a healthy O horizon. Much of the soil demonstrates the properties of A horizon soils (decomposed parent rock mineral material).



Upland area characterized by dominant canopy dotted by small grasslands.



Upland canopy ground condition with lack of groundcover.



Upland canopy ground condition with extensive erosion around critical root zone.



Erosion from parking lot, sediment is carried over jogging path and deposited into Lady Bird Lake directly impacting water quality.

Riparian Edge/Wetland

The Riparian Edge/Wetland canopy species are dominated by Bald Cypress (*Taxodium distichum*) and Pecan (*Carya illinoensis*). Much of the bank is covered with invasive species such as Dallisgrass (*Paspalum dilatatum*), Bermudagrass (*Cynodon dactylon*), Crabgrass (*Digitaria spp.*), Elephant Ear (*Colocasia antiquorum*), Giant Reed (*Arundo donax*), as well as other aggressive native species such as Giant Ragweed (*Ambrosia trifida*). The wetland habitat has been adversely impacted by reservoir impoundment, replacing diverse streamside habitat with a uniform and deep sterile condition (Kutac and Caran 1994). Areas with varying topography are dominated by invasive species thereby negating habitat potential. The river bank exhibits damage by park users trying to access lake waters for fishing and other activities as well as areas of erosion from parking runoff. The soil is compacted and most areas do not possess a healthy O horizon though pockets with denser vegetation may have minimal organic matter due to deposition from upper areas of park.



Damage from park users accessing lake edge.



Elephant ear and Dallisgrass along lake edge.



Erosion from upland area and parking runoff.

Opportunities to restore ecological function

While the current site is performing ecologically poorly, there are many opportunities to improve ecological function in addition to making it a significant public park. To restore ecosystem function is to not simply replace components but to use restoration principles to restore processes which allow natural systems to repair themselves and to remain relatively stable. In practice, the assessment and repair of natural processes begins with the soil. Healthy soil, and the healthy plant communities it can support, comprises the foundation for functional ecosystems. It is recommended for the Holly Shores Master Plan to evaluate historical and current conditions and develop landscape performance goals. A spectrum of techniques and priority areas could be developed that support the design and function of the site. Potential healthy plant communities could range from savanna, woodland to riparian areas. Combining programmatic and park functions with ecological function does not need to be mutually exclusive. It is possible to increase urban ecology while enhancing park functions. This report provides recommendations for restoring ecological function to the site using restoration principles while keeping in mind the design and program needs of the park. The recommendations at this level of investigation are broad and generalized. As the project moves forward further review of the landscape performance goals would be needed to better outline the strategies for implementation, establishment, maintenance and long term monitoring.

Restoration principles are included to help make the connections between information presented in the site context section and site specific information, and to help readers understand how this information relates to future restoration and the proposed master plan. While the project may not be restoring certain areas to historical climax conditions restoration principles, which are informed by historical plant communities, still apply and allow a hybrid condition to exist that will foster greater ecological integrity than present conditions. Developing a restoration and maintenance plan that correlates with an interpretive plan will be necessary for successful implementation, maintenance, and educational impact. Considering maintenance and educational opportunities at the early stages of design greatly influence efficient implementation and long term project success.

As an overall strategy, it is often beneficial for restoration efforts to occur incrementally so that the vagaries of climate do not overwhelm a significant investment or effort. This incremental approach will allow for fine tuning the restoration methods to what works best on site. Initial efforts should begin in high priority areas. Further, combining restoration areas with trail locations will increase accessibility, facilitate monitoring and add to the interpretive and educational experience for site users and visitors.

It is important for the design team to understand that the creation of sustained, successful habitat will only occur if the park's design is based on measures of function rather than measures of structure (Grayson et al. 1998). Structure, or patterns of an ecosystem, describes the various physical and biological parts of that ecosystem, whereas function includes the interactions of organisms with one another and with their physical environment (Grayson et al. 1998). Many projects are designed with the assumption that if the structure (i.e. spatial characteristics) looks right, the system will also function correctly, but many restoration/habitat projects that have been deemed a success, in terms of realized project goals, were ultimately not successful because the measures of function were insufficient or absent (Grayson et al. 1998). It is unlikely that Holly Shores can be returned to historical climax community conditions, but the design strategy can implement such achievable goals by defining performance benchmarks in the predesign phase. For example, the project could aim to increasing plant species diversity and richness by 85% or reducing nutrient runoff by a specific target amount (Grayson et al. 1998).

Proposed Zones

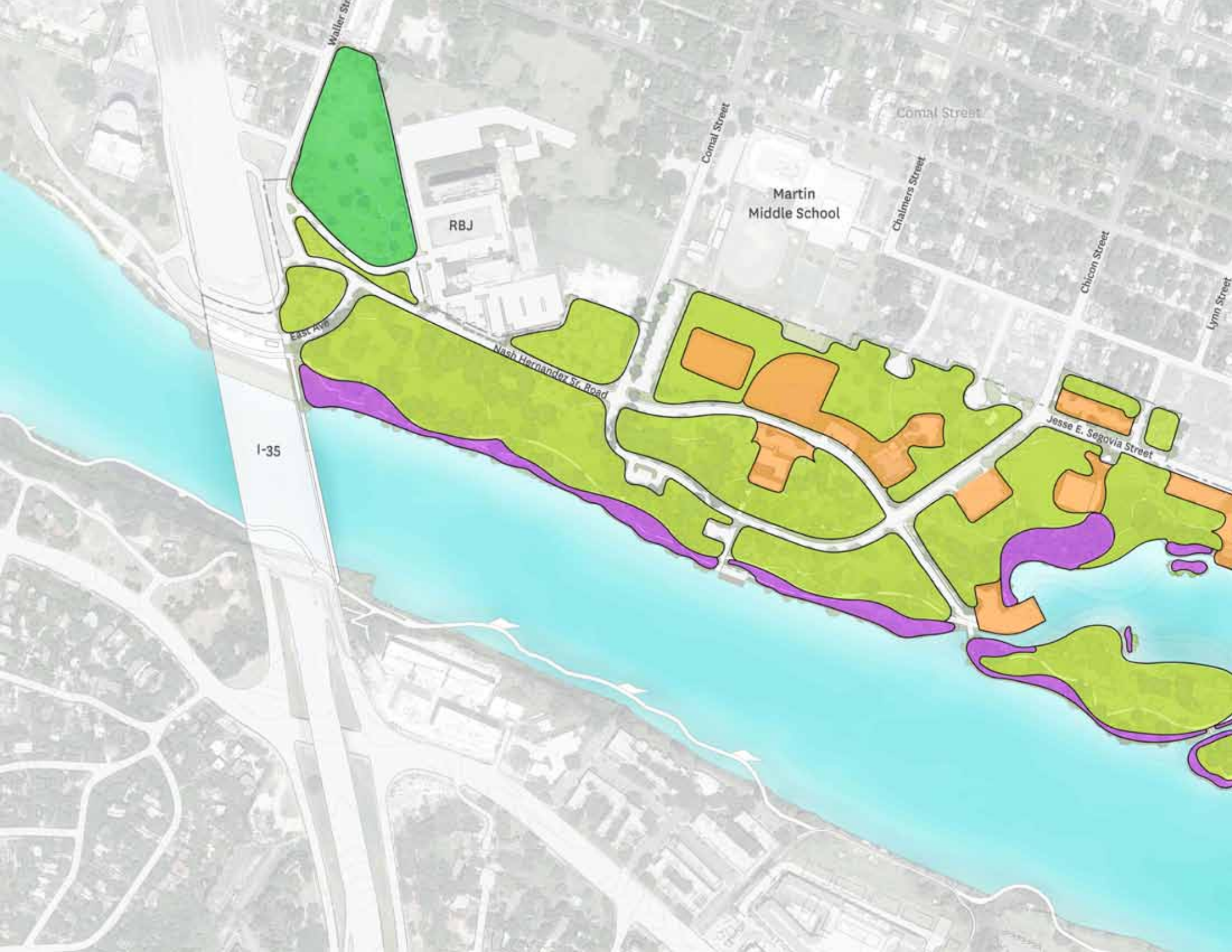
The proposed zones for Holly Shores include:

Zone 1 – Wetland/Riparian Edge – Includes lake's edge and can include engineered wetland features such as bioswales, ephemeral wetlands, and artificial wetland micro-topography within the lake.

Zone 2 – Upland – Includes meadows and areas of varying degrees of closed canopy. Although these conditions will denote differing uses and spatial qualities (e.g. active open areas vs. restricted pathways, lawn condition vs. herbaceous understory), together they form a singular ecosystem typology. For presentation purposes Zone 2 can be broken into subgroups including meadow, herbaceous understory, prairie, and woodland.

Zone 3 – Athletic fields/high traffic areas – Includes areas with specific uses that include high foot traffic such as sports fields, areas around pools, grass areas around festival beach, etc. It might be necessary to use turf that can handle higher foot traffic, but the design team should make sure that those varieties are not invasive. Likewise, as a protective measure, it will help prevent the potential spread of such plant species if buffers are placed around these areas. Buffers could take the form of bioswales, shrubs, canopy shaded areas.

Zone 4 – Permaculture and garden sites– Includes areas of food and aesthetic plant production. These can also serve as education nodes about the design's goals, thereby promoting larger idea of sustainability and environmental awareness. It would be beneficial to place bioswales around garden areas to alleviate any nutrient runoff.



Waller St

RBJ

Martin Middle School

Comal Street

Chalmers Street

Chicon Street

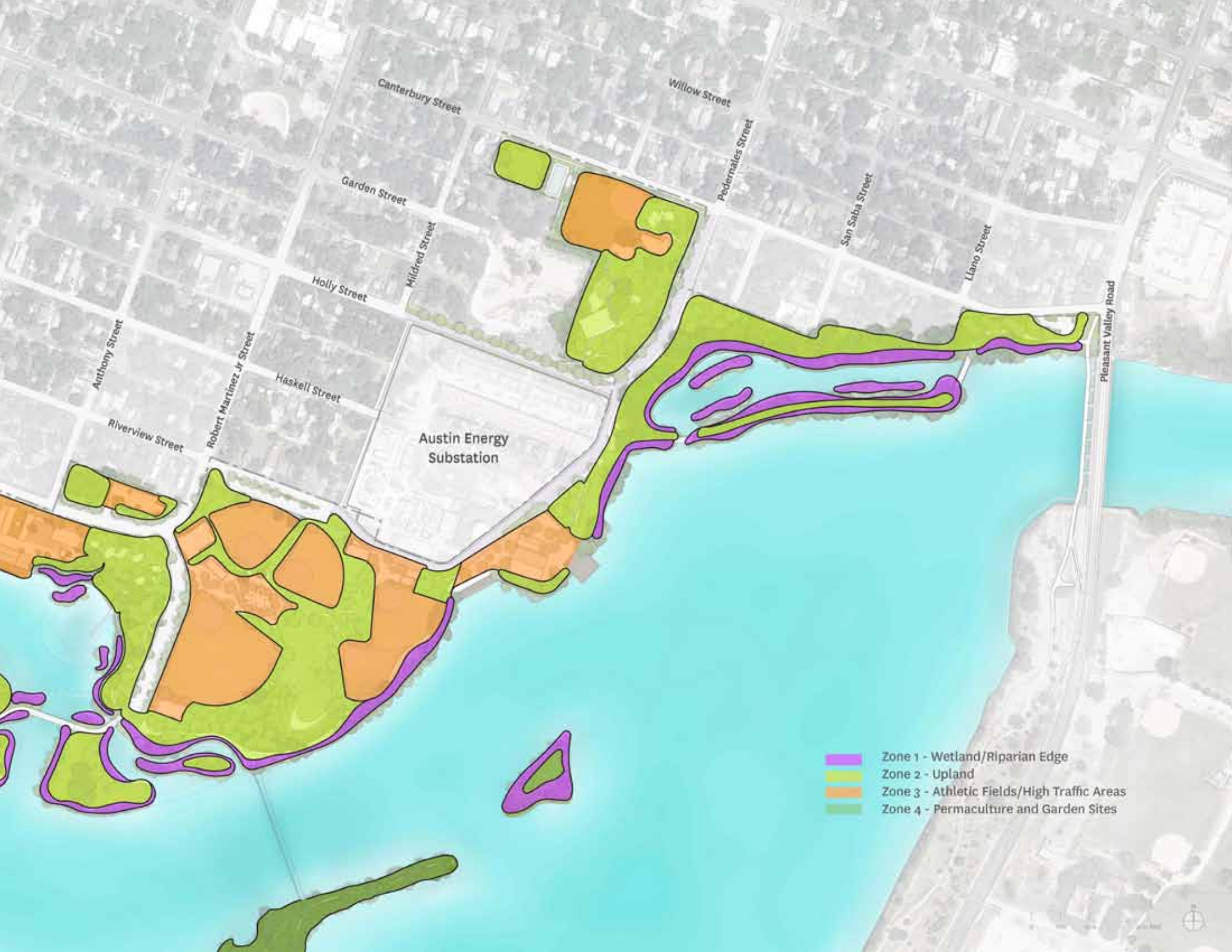
Lynn Street

Jesse E. Segovia Street

I-35

East Ave

Nash Hernandez Sr. Road



Zone 1 – Riparian Edge/Wetland

Since riparian restoration is such an important component of this project, a brief overview of some of the considerations of riparian restoration are provided here. Riparian vegetation is a major source of energy and nutrients for stream communities. Overhanging riparian vegetation keeps streams cool, which is especially important for the increasing the site's species diversity. The target community in riparian areas is frequently a properly functioning gallery forest, dominated by bottomland hardwood species with an herbaceous layer beneath, composed primarily of species that will enhance bank stability. Historically, the riparian areas along perennial and frequently flowing intermittent streams on the Edwards Plateau were of this community type, while intermittent streams, and streams in drier areas, such as the recharge zone of the Edwards Aquifer, tend to be more reminiscent of surrounding upland. Gallery forest supports the goals of enhanced water quality along stream channels by enhancing bank stability, removing nutrients and other pollutants such as sediments, helping to grade stream channels, and slowing water velocities.

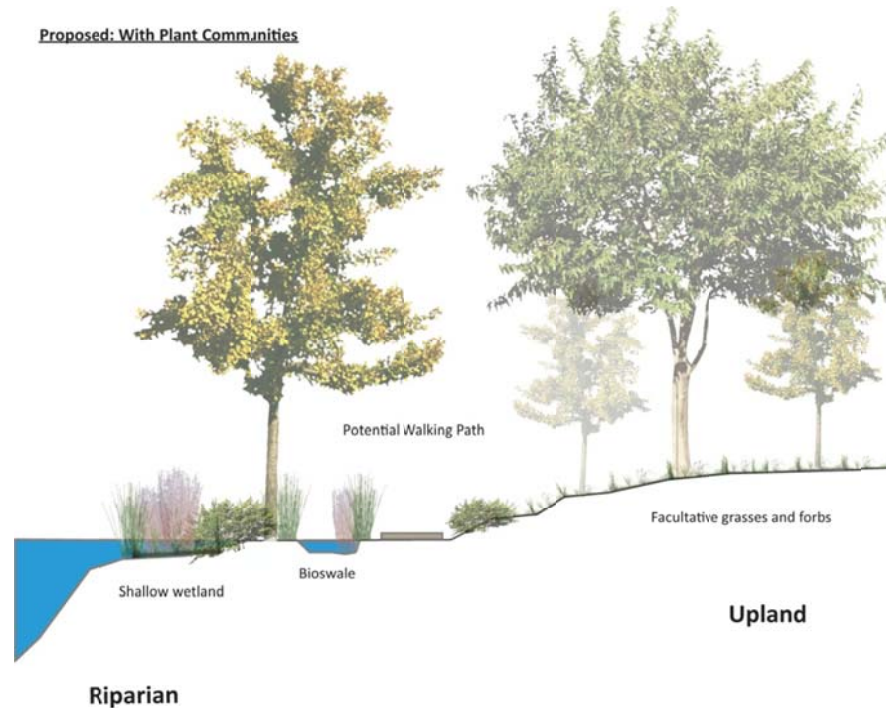
Riparian Plant Community Considerations

For riparian restoration, a healthy, diverse native plant community adjacent to receiving water bodies and riparian zones helps control erosion, filter sediment and pollutants carried in stormwater, supports the health of aquatic ecosystems, and provides flood control and habitat. The root system of the vegetated area is crucial for achieving this health status. Increased native diversity can be encouraged through selective removal of invasive species and seeding of native woody and herbaceous species. Primary goals guiding species selection in riparian areas are enhanced bank stability and water quality. Many species found in central and southwest Texas have been given draft stability ratings based on their contribution to bank stability (Nelle 2009). Stability ratings range from 1 to 10, with 1 approximating the bare ground and 10 anchored rock. Ideally, riparian areas will be dominated by plants with stability ratings between 6 and 9. Stability ratings of 7 or higher are considered to be the minimum for acceptable bank stability. However, combinations of species, particularly woody species in association with grasses or sedges, can provide higher stabilities than reflected in individual species ratings (Nelle 2009).

In addition to stability ratings, USFWS wetland indicator status should be considered. Riparian areas should contain a mix of obligate wetland, facultative wetland and facultative species, dependent on water availability. It is important that all riparian areas contain some species from the facultative groups to provide stability as water availability fluctuates.

Establishment of these species can be done passively or actively. Passive establishment is the regeneration of an existing vegetated buffer through the succession of native plants and natural seed dispersal. This is facilitated through elimination of invasive species and selective vegetation thinning. Active establishment is a technique used with little or no existing riparian buffer. This technique involves the creation of a site specific plan detailing the species and location of proposed vegetation. In some cases a combination of the two approaches is ideal, but in the case of Holly Shores Festival Beach, with large areas of poor riparian buffer, an active approach is recommended.

The active approach requires several steps for effective buffer improvements and establishment. Re-establishing the riparian zone should take place after erosion control measures have been established in the area draining to Lady Bird Lake. First, it is important to remove invasive species from the riparian zone, keeping soil disturbance to a minimum to reduce vegetation loss and erosion. Erosion control techniques should be implemented adjacent to the riparian buffer, especially in any nearby construction areas, to aid in erosion control adjacent to Lady Bird Lake. It is then important to establish different vegetation planting zones: an inner, middle and outer zone (See Figure below).



The shallow wetland could contain unmanaged vegetation while the bioswale and upland areas could contain managed vegetation. When establishing these zones, it is best to plant herbaceous seeding/plantings first before woody species. For tree establishment, it is recommended to plant a mix of balled and burlapped trees and saplings. In general, 30% of the riparian area to be reforested should be planted with 3" caliper trees at 6-7' intervals and 60% of the area with saplings at 15' intervals. These densities and amounts are flexible dependent upon restoration goals. All vegetation will require temporary irrigation after establishment, and the riparian zone will need to be monitored regularly for signs of erosion, sedimentation, debris, establishment or invasive species. Irrigation and monitoring requirements should be detailed in restoration and maintenance plans.

A final consideration is the determination of the riparian buffer width. As mentioned in the site assessment, the current buffer varies with regard to both width and ecological health. When possible, the riparian buffer area shall be as large in size as possible, or a minimum width of 20 feet on either side of the water body. A wider buffer is more effective at filtering and reducing pollutant levels, specifically nitrogen (Mayer et al, 2005). Having a larger buffer zone will also allow for improved bank conditions. It is also recommended to refer to the City of Austin's updates to the Watershed Protection Ordinance guidelines regarding stream buffers to help inform ideal buffer width for this site. In the section along Lady Bird Lake, it is recommended that the banks be re-graded to include a gentler slope with a shallow shelf extending into the water, and be revegetated with native species according to the recommendations above. In addition to adding diversity and transition to the slope it could also be beneficial to add topographic diversity to the edge condition by pulling some areas back and extending other locations farther out into the water. If the water's edge won't allow re-grading, then a 6-8' wide artificial shelf of submerged rip rap or local stone from other re-graded areas could be constructed and planted with native obligate species creating an artificial wetland habitat. Organic matter will eventually settle over the constructed area allowing passive vegetation. Another option would be the installation of floating islands to help remove nutrient loads. This option wouldn't be as effective regarding habitat creation due to the fact that this strategy does not address changes in underwater topography and water depth necessary for maximizing habitat (Wanielista et al. 2012) though it could be an effective strategy for areas where improving water quality is a priority.

LID Recommendations

Beyond providing a healthy buffer to enhance water quality and reduce erosion, the entire site should be evaluated for opportunities to restore and improve hydrological function. As much of the upland areas contribute and drain to the Colorado, slowing surface flow from locations such as parking lots, turf areas and buildings through dispersed vegetated systems would add to the larger riparian function of the site. It is recommended that Holly Shores integrate innovative stormwater techniques to improve site hydrology. Low Impact Development (LID) or Green Infrastructure is a comprehensive hydrological approach to site planning, design and pollution prevention strategies that creates a more economically sustainable and ecologically functional landscape. As such, the LID approach provides many benefits to a community's water resources and overall quality of life. It is a comprehensive approach to land development or re-development to manage stormwater runoff. The LID methodology works with nature to manage stormwater as close to its source as possible, treating runoff as a resource rather than a waste product. Using LID techniques can help:

- Emphasize conservation and the use of on-site features to protect water quality;
- Creates functional and appealing site drainage;
- Decrease impact on stormwater infrastructure;
- Recharge groundwater and the aquifer (where appropriate); and
- Reduce construction, maintenance and inspection costs.

There are many technologies and techniques associated with LID but this section will focus on three – rain gardens (biofiltration/bioretenion), swales (bioswales), and rainwater harvesting – as these are three of the tools identified as most appropriate for the Holly Shores Festival Beach.

Rain gardens (or bioretention) function as a soil and plant-based filtration device that removes pollutants through a variety of physical, biological, and chemical treatment processes. Rain gardens allow water to be retained in a basin shaped landscape area with plants and soil where the water is allowed to pass through the plant roots and the soil column. These facilities normally consist of a filtration bed, ponding area, organic or mulch layer, and plants. Rain gardens provides stormwater treatment that enhances the quality of downstream water bodies by infiltrating runoff, or when designed with liner or underdrain, temporarily storing runoff and releasing it over a period of days to the receiving water. The vegetation within the rain garden can provide shade and wind breaks, and help absorb noise. These systems are easily integrated into site landscaping and their design can be formal or informal in character. The exact design requirements for this technology are dependent on many variables yet to be determined including: whether or not they are designed for infiltration, desired function, and aesthetic qualities.

Swales are vegetated channels that convey stormwater and remove pollutants by sedimentation and infiltration through soil. Unlike rain gardens which capture, retain and infiltrate stormwater, swales are primarily stormwater conveyance systems. They can provide sufficient control under light to moderate runoff conditions, but their ability to control large storms is limited. Therefore, they are most applicable in low to moderate sloped areas or along roadsides as an alternative to ditches and curb and gutter drainage. Swales can be more aesthetically pleasing than concrete or rock-lined drainage systems and are generally less expensive to construct and maintain. With this technology, it is important that the swale maintain 100% cover with short grasses to be effective.

Rainwater harvesting - collecting rainwater from impervious surfaces and storing it for later use - is a common technique practiced in drought stricken Central Texas. Much guidance exists for the design of these systems, such as from the Texas Water Development Board. It is also important to note that there are current changes being made to local rainwater harvesting laws, and design criteria are often modified, so it is best to check the most current regulations and incentives before implementing this practice. While potable use is possible for harvested rainwater, irrigation and the non-potable uses of toilets, urinals and HVAC make-up are currently the most common end uses for harvested rainwater. These are all beneficial uses individually, and when combined, they constitute a significant portion of water demand.

None of these technologies mentioned above are stand-alone systems. In fact, often the best benefit is derived from coupling these approaches into what is known as the **treatment train approach**. A treatment train consists of several stormwater practices installed in series. Having multiple systems provides several benefits including a level of redundancy in case one system is not functioning properly, optimizing pollutant removal capabilities, potential reduction in maintenance costs. The configuration for a treatment train can take many different forms. Common applications include the use of a vegetated swale to convey stormwater to or from other treatment systems, such as a rain garden. In this scenario, swales can provide some level of pretreatment when installed upstream of other facilities. Other applications include the practice of disconnecting downspouts and directing this runoff through a series of additional BMPs.

Design Considerations

Before implementing any LID techniques on site, it will important to determine the volume of the annual runoff to be managed. This may be specified in existing local regulations. Or, it is possible to analyze historical rainfall data in the region to determine the relationship between the water quality volume and the amount of the annual runoff to be treated. It will also be important to conduct a thorough analysis of the following, at the minimum:

- Soil type and whether modifications are needed;
- The storage needed to capture and treat the runoff (based on local conditions);
- The sensitivity of the receiving body;
- Future maintenance capacities;
- Installation techniques;
- The ability to infiltrate the runoff (or if they will be filtration features); and
- The desired performance goals of the BMP.

Zone2 - Upland

Historically the upland consisted of savanna with 20 -25% tree coverage which translates into 2 – 3 trees per acre. The current condition includes a dominant closed canopy with little/no understory and small pocket meadows. Removing mature large shade trees, many of which most likely classify as city of Austin heritage trees, is highly unlikely, however, these areas can be dramatically improved with the removal of invasive species, soil amendment, placement of appropriate plant communities, increase of successional plantings, inclusion of micro-topography, and limb reduction. Below we have provided recommendations for working with these conditions and improving the upland function thereby improving the entire riparian function.

Native turf meadows

We recommend transforming many of the pocket meadows that are currently dominated by Bermudagrass (*Cynodon dactylon*) to native turf areas. Lawns are dominant features within the contemporary landscape, however, the horticultural adaptation of this landscape has focused on the development of monocultures that are often times invasive or require a vast amount of resources to survive; up to 75% of potable water use during summer months (Woodson 2013). Water conservation has become the major resource management issue due to an extended drought that is approaching record status and the impact has translated into mandated irrigation restrictions.

The LBJWC researched and developed HABITURF™, a turf mix that includes at least three shortgrass species that evolved in drought conditions. These species were selected because of their ability to address resource conservation as well as their ability to aid in the provision of ecosystem services. By utilizing these species projects can minimize environmental impact while simultaneously incorporating a highly desired landscape design element.

The Wildflower Center has found that a mix of buffalograss (*Bouteloua dactyloides*), blue grama (*Bouteloua gracilis*) and curly-mesquite (*Hilaria belangeri*) and other species as available needs less mowing, watering and weeding and also replicates nature's shortgrass prairies. Although the species are different, these grasses have almost identically shaped leaves and color and produce a great-looking, even-textured, dense lawn that does well in full sun but also tolerates 50 percent shade. The mixes are available from native seed suppliers such as Douglass King Company and Native American Seed. More detailed information is provided regarding installation in the appendix.

Prairie plantings/meadow

Historically, any spaces receiving full sun at Holly Shores would have been dominated by a grassland community that would have included both grasses and forb species as identified in the historical description. Depending upon project goals, the design team could increase species richness and diversity by including prairie areas throughout the park. If reduction of native turf area is unacceptable, the meadows could be bordered by rings of prairie forbs adding color and texture.

Site preparation for planting prairie species is the same methodology as establishing turf grass, except that forbs, or mixes containing forbs should be planted in the fall (depending upon climate, Late September – Early November). Forb prairie species generally thrive after disturbance events so after establishment these areas should be mowed, or if possible burned, in late summer to clear thatch and create favorable conditions for wildflower growth. Many of the popular wildflower species are annuals so park staff might need to reseed these areas each year if a prominent display is desired each year.

Prairie species also are recommended for the sites innovative stormwater features. This is due to the deep rooted system of the native grasses that increase infiltration and cleansing of surface runoff. As well many of the stormwater features need to be able to withstand long periods of drought in addition to intense rainfall events and inundation. Many native grass species have adapted well to these conditions and are identified in the plant list included in the appendix.

Herbaceous understory

Areas of full shade at Holly Shores are in extremely poor condition. Many have no groundcover and all areas have extremely poor soils due to erosion and compaction. Historically these areas would possess higher canopies, a diverse herbaceous understory plant community, and sporadic depressions that created ephemeral wetlands. Floral and Faunal species richness was due in large part to healthy layers of species succession, that is to say, the inherent dynamic nature of riparian areas was driven by regular disturbance events and these events ensured a robust palette of plant species with varying degrees of age. The shaded areas at Holly Shores can be improved by aerating the soil, gradually incorporating small amounts of organic matter into top layer of soil, reducing the canopy by strategic removal of limbs, planting and seeding with appropriate herbaceous and grass shade communities, delineating planted areas by restricting park visitor access/creating vegetation and soil protection zones, and increasing species diversity and succession.

These areas can also help diversify the spatial feel of Holly Shores transforming it into a richer experience for park visitors. By reducing the canopy there will be greater play between shadow and light while retaining shade desired during hot summers. Adding the herbaceous understory will also improve visual appeal by bringing in a greater variety of colors and textures. The addition of this vegetative community should not visually compress the space as the raised canopy will help increase volume.



Source: Leor Pantilat. Brazos Bend State Park. Understory herbaceous condition.

The greatest challenge during these efforts will be ensuring existing tree health. Since the soil has been eroded down to the A horizon, it will be difficult to amend and plant especially since this activity will take place in the critical root zone (CRZ). These efforts will most likely need to occur incrementally to mitigate any possible adverse impacts to the CRZ. Additionally, it will be important to prevent any future impacts to the understory areas by restricting access. This can be achieved in multiple ways, boardwalks seem to be a promising solution as there will be no question where visitors can stray from the path and a boardwalk could provide a visual and educational thread by linking previously disparate elements. For example, the boardwalk could meander from the herbaceous understory, through prairie plantings to the riparian edge that slightly overlaps the water near an artificial wetland.

Please refer to the appendix for potential plant species.

Mowing will replace the natural disturbances of fire and flooding for the upland locations. Understory plantings could be zoned into no mow and mow locations for ease of maintenance. Provided below are general mowing recommendations for tallgrass areas and short grass locations. These recommendations will need adjustment and refinement based on the ultimate design. As well mowing frequencies (and the comprehensive maintenance plan) should respond to things such as climatic conditions, vegetation response and performance or desired appearance. Maintaining habitats requires adaptive maintenance.

Tallgrass mowing

- At a minimum the tallgrass area generally does not require mowing on a regular basis and mowing of tallgrass areas may only be required every three to six years.
- However, tallgrasses can tolerate annual mowing in winter if desired. The best time to mow tallgrasses is in the winter while most grasses are dormant.
- Mowing at other times of the year may result in loss of that year's seed.
- Mowing may be undertaken any time after grass seeds have ripened (December), or alternatively may be delayed until very early spring (February) just before the plants begin to green up.
- Mowing height should be no lower than 6 inches.

Shortgrass mowing

- Mow shortgrass prairie areas three times per year, to a height of approximately 3-4 inches.
- Mow one time in late winter (January - February) to remove dead standing material, after seeds have ripened, and before the spring growing season begins.
- Mow one time in summer (June –July) to promote spring wildflowers, after wildflowers have dropped their seeds.
- Mow one time in late summer (September-October) to maintain grass height of approximately 3 inches.
- To further promote wildflowers in the mixed grass areas, the shortgrass prairie may be mowed more frequently at a height of 3 - 4”.

Zone 3 – Athletic fields/high traffic areas

It will be important for the team to determine which areas qualify for any areas that might require aggressive plant varieties due to their ability to withstand higher frequencies of foot traffic. Areas that possess large amounts of foot traffic experience excessive soil compaction impacting the soil’s water infiltration capacity as well as preventing root growth. It is recommended that plant species be researched so that all implications of use are clearly understood. Furthermore, it is recommended that varieties be chosen that are non-seeding so that they will provide less of a threat to habitat areas. These areas also often require greater resources for adequate growth so it is very likely that the maintenance crews will be applying synthetic fertilizer, herbicides, fungicides, etc. Runoff from these activities is a definite threat to ecosystem function and water quality. To intercept runoff and prevent aggressive species from spreading it will be necessary to buffer the edges of these areas by utilizing bioswales or other LID features, and plants that create full shade conditions such as dense shrubs or trees.

Zone 4 – Permaculture and Garden Sites

These areas will be maintained by knowledgeable gardeners and can help serve as educational components for not only sustainable food production, but also the park’s landscape design based on landscape function/ecosystem services and habitat creation. This could also include education of master naturalists and citizen scientists who can help monitor the park.

Most of these locations will use organic fertilizers and high nutrients soils to enhance the productivity of their produce. Incorporating vegetative buffers and innovative stormwater features at these locations is also recommended to improve the water quality leaving these sites and protect the riparian functions.

General implementation strategies and recommendations

Any site improvements will most likely consist of some disturbances to the site. Therefore a preliminary item to consider regarding developing the site is how the design will be implemented. Before construction begins it will be crucial to stabilize the site and set up protection measures so that the exposed soil does not runoff into Lady Bird Lake. It is anticipated that the construction processes could result in a lot of fines, sediment, and top soil being washed into the river. Construction Best Management Practices should be established and explored to protect these riparian zones.

The next step would most likely be to grade the site according to the desired goals of the proposed site Master Plan, remove existing invasive species, prepare the soil for vegetation establishment, and then seed or plug the site according to the landscape zones established in the Plan. Even areas without impervious cover will most likely be compacted. Thus, the next step in site restoration is to conduct soil preparation prior to seeding (or plugging) the areas to be revegetated. It may be necessary to rip or roughen the surface. This method allows for organic matter to move deeper into the soil, serving to anchor soil amendments and more rapidly establish healthy soil conditions. During this process, organic matter may be added to the soil, low-nutrient compost is recommended for soil treatment. Ripping and roughening also helps prevent erosion. By increasing soil surface roughness and providing areas for sediment to be captured, runoff volume and erosion is reduced. Soil preparation requires planning and time. If done properly, however, the efforts will reduce time and inputs in the long-term and plant establishment will have a greater chance of success.

After the site has been graded, stabilized, and prepped, seeding is the least expensive method for plant establishment. The ideal times to seed are in early spring or mid to late fall. It is recommended to seed forbs in the fall for optimal germination. It will be important to monitor the areas to be seeded for any invasive species which might have encroached in these areas once the asphalt was lifted and the site graded and prepped. It will be important to remove these species before seeding. Using a no-till drill is a very effective method for installing seed, especially for such a large site. Alternatively, seed can be hand broadcast and raked in by hand or with a tractor-drawn harrow to achieve good soil-seed contact. A majority of the seed can be obtained from a commercial outfit, however it is recommended to additionally add local seed to increase diversity and local genetic stock to ensure that the plants are adapted to that region and add robustness to the mixture. Local seed can be collected by volunteer efforts or possibly donated from nearby property owners with healthy pastures. Seeding methods,

equipment rentals and types, and exact timing and rates would be further developed in the restoration plan.

There are several areas on the site where establishing vegetation from container plants might be preferred. These areas include fully shaded upland areas. Some of the riparian species are difficult to establish from seed and container plants and may be preferred in these areas as well. Container plants are more expensive than seed, but will establish faster, enhance soil biology, prevent erosion and provide a more immediate, finished aesthetic.

Immediately after installing the seeds and/or plants, temporary irrigation will be necessary for successful establishment. Irrigation will probably be required for a full growing season; however, specific rates and methods should be established in a site restoration plan. Trees will require higher amounts of watering and for a longer establishment period. The formal plantscape areas surrounding buildings program may require more regular irrigation post-establishment than other areas of the site. In this case, an irrigation system can be installed or the areas can be hand watered. Either method could also use rainwater captured from the buildings' rooftops and collected in cisterns. This method would also help promote site educational components including water conservation and stormwater runoff management.

On site measurements of infiltration, composition and structure can be compared to expected values found in the soil survey to help determine soil health. These measurements can also inform decisions on plant selection and on appropriate technologies for the site such as rain gardens or bioswales. Because soil restoration is difficult and expensive, effort should be made to identify and protect healthy soil. However, even with proper site hygiene, some soil may be disturbed and left bare for long periods during site construction. In some cases, compaction reduction activities and organic soil amendments may be needed to restore soil health. Soil disturbance should be addressed prior to revegetation efforts because damaged soil cannot support healthy plant communities. Healthy, diverse plant communities, that are suited to local conditions, drive ecosystem function. Existing communities can be compared to reference sites with similar conditions and to the ecological sites defined for the projects soils (described previously) to determine the site's current ecological state and to help determine the appropriate target community for the site. Full shaded areas with bare soil will present a challenge due to the canopy tree's critical root zone. It is recommended that these areas be lightly roughened and organic matter be incorporated into the soil. It would be beneficial if these areas were delineated from public space and access be restricted by park users. These areas could exist as full shade understory plant communities, increasing biodiversity and experiential spatial elements of the park.

Maintenance recommendations

In general, installing and establishing functional landscapes requires more planning and effort than a traditional landscape. However as time goes on maintenance requirements will lessen and fewer inputs and resources (such as watering, fertilizers, and mowing) will be needed. In our practice we consider maintenance a key component to project success and something that should be considered in the predesign and design phases. Once construction or any development activity on the site begins maintenance begins as well. With the development of a restoration and maintenance plan a field guide is recommended to help train contractors and the maintenance crew during construction and maintenance. Key components to the maintenance plan will include guidelines for installation, establishment, and long term maintenance covering topics such as: invasive species control, soil health, innovative BMPs to mitigate runoff, sequencing of site installation, planting windows, site hygiene and equipment storage, reseeding, irrigation and mowing.

Many maintenance recommendations have been provided above per habitat however maintenance and ecological success will rely on the maintenance efforts and strategies working collectively to improve the entire site as one riparian system. Therefore, while the site might have a variety of plant communities requiring unique maintenance practices, it should be understood and planned for that activities in one location will have influences on other locations of the site. The primary maintenance focus should be on considering surface flow across the site to the Colorado by improving vegetative habitats. Through improving water quality and quantity and vegetation diversity other ecosystem services will be increased resulting in a highly performing landscape. As mentioned at the beginning of this report, Holly Shores has the opportunity to be a model for the city of Austin. It could be an especially powerful project by training park staff and maintenance crews to establish, maintain, and monitor functioning landscapes which could positively impact the urban ecology of other city parks, the rest of the Lady Bird lake system, and future city projects.

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Appendix

A. HABITURF™ installation guidelines

For every 1,000 square feet you will need about 3 to 4 pounds of HABITURF™

A well-textured, well-drained soil is essential for long-term lawn success. Normally, after construction, developers spread a couple of inches of imported soil over soil compacted by heavy construction machinery. A sustainable lawn needs deep roots, so rip, rotovate or disk your soil to at least 8 inches - the deeper the better. Then incorporate a ½ inch layer of living compost with a low nitrogen and low phosphorus content into the top 3 inches of your prepared soil. Ask your local plant nursery for recommendations. Do not use tree bark, wood shavings or mulch. Grass won't grow in this. The soil surface should be finished to a fine granular texture and free from large stones. If you are on undisturbed, uncompacted native soils then till lightly and add ¼ inch compost into the top 1 inch or alternatively add a compost tea.

Sow the seed — no till drills, hand-cranked seed broadcasters, or by hand — seed should be raked and pressed with a garden roller. Seeds need good soil contact. Spring is the best sowing time once soil temperatures warm up (day time temperatures constantly above 85F). Later in the growing season also works well but will require more water. Avoid sowing in late fall and winter (October through mid-March).

The lawn area should be irrigated every day for the first 10 days or longer, up to 15 days, under very hot, dry or windy conditions to prevent the soil from drying out. Thereafter, two soil-wetting (top 4 inches of soil) events per week for the next month, then two soil-wetting (top 6 inches of soil minimum) events per month for the remainder of the growing season which is March through November. Remove weeds as they appear, before they go to seed or become too established. Once the lawn is established in three to four months, you may opt to stop irrigating to save water and allow the lawn to go 'drought dormant'. The native grasses will go brown and temporarily stop growing but, adapted to drought, will green-up once rain returns. In prolonged drought (say over 6 weeks in summer with no rain) an irrigation event (if allowed) once every 5 - 6 weeks while not triggering "green-up" will keep the dormant turf alive.

We suggest a 3 to 4 inch cut for a great-looking, dense turf, resistant to weeds and light to moderate foot traffic. However, a 6-inch cut will produce a beautiful deeper lawn with a few seed heads if watered. Mow once every 3 to 5 weeks when growing and not at all when drought or cold dormant. Mowing shorter —2 inches or less— will damage your lawn's health. Conversely, not mowing at all through the growing season will produce a longer turf (8 inches or so high) with a lower density. This may be acceptable depending on how you use your lawn. However, allowing the grass to seed-out once a year, perhaps when you go on vacation, guarantees a good seed bank - insurance against drought, heavy foot traffic and weeds. It also provides high habitat value.

Make sure that the lawn overwinters as a thick lush turf greater than 4 inches high. Observations have clearly shown that this dramatically reduces weeds the following spring – such as clover, dandelions and thistles. This means that the last mow should be a high (> 4 inches) mow and no later than Mid-October.

It will be necessary to fertilize the seedlings with a low nutrient (2-3-2) organic fertilizer that contains humic acid as well as micronutrients 2-4 times during the first month depending upon growth. If there are issues such as chlorosis (yellowing of the leaves), then the soil should be tested to determine macro and micronutrient levels. By closely monitoring the turf during establishment you'll be able to set it upon a successful trajectory. Once the turf is established, if you return the grass cuttings directly to the soil, annual feeding should not be necessary. A healthy, living soil with live compost plus the natural 'rain' of airborne nutrients will be sufficient to keep your lawn at ecological equilibrium just like a natural prairie. But for high-use lawns with children and/or pets, or on freely-draining soils, a fall dressing with a low-nutrient, living compost or compost tea plus aeration with a garden fork will certainly help.

Make sure to monitor weed growth during turf establishment to ensure that weeds don't out-compete grass seedlings. If the site was not prepared properly and weed seed still exists during seeding, it may be necessary to apply herbicide to prevent turf failure. If herbicide is used, make sure you read the Material Safety and Data Sheet (MSDS) and follow application directions.

B. Plant lists

Riparian Community

<i>Trees/Shrubs</i>	
Bald cypress	<i>Taxodium distichum</i>
Cedar elm	<i>Ulmus crassifolia</i>
Eastern swampprivet	<i>Forestiera acuminata</i>
Green ash	<i>Fraxinus pennsylvanica</i>
Hawthorn	<i>Crataegus spp.</i>
Planertree	<i>Planera aquatica</i>
Possumhaw	<i>Ilex decidua</i>
Sugar hackberry	<i>Celtis laevigata</i>
Sycamore	<i>Platanus occidentalis</i>
Water hickory	<i>Carya aquatica</i>
Water locust	<i>Gleditsia aquatica</i>
Black willow	<i>Salix nigra</i>
Sandbar willow	<i>Salix exigua</i>
Eastern cottonwood	<i>Populus deltoides</i>
Pecan	<i>Carya illinoensis</i>
Little walnut	<i>Juglans microcarpa</i>
Black walnut	<i>Juglans nigra</i>
Roughleaf dogwood	<i>Cornus drummondii</i>
Flame-leaf sumac	<i>Rhus lanceolata</i>
<i>Grasses/Forbs</i>	
Inland sea oats	<i>Chasmanthium latifolium</i>
Sedges	<i>Carex spp.</i>
Rushes	<i>Juncus spp.</i>

Wetland Community General

<u>Grasses/Sedges</u>	
Bushy bluestem	<i>Andropogon glomeratus</i>
Duckweeds	<i>Lemna spp.</i>
Eastern gama grass	<i>Tripsacum dactyloides</i>
Flatsedge	<i>Cyperus spp.</i>
Inland sea oats	<i>Chasmanthium latifolium</i>
Largeleaf pondweed	<i>Potamogeton amplifolius</i>
Sedges	<i>Carex spp.</i>
Southern naiad	<i>Najas guadalupensis</i>
Swamp smartweed	<i>Polygonum hydropiperoides</i>
Switchgrass	<i>Panicum virgatum</i>
Water stargrass	<i>Heteranthera dubia</i>
Willow-weed	<i>Polygonum laphifolium</i>
Rushes	<i>Juncus spp.</i>
Switchgrass	<i>Panicum virgatum</i>
Nimblewill	<i>Muhlenbergia schreberi</i>
Palmetto	<i>Sabal minor</i>
<u>Forbs</u>	
Drummond's wild petunia	<i>Ruellia drummondiana</i>
Water pennywort	<i>Hydrocotyle umbellata</i>
Marshmallow hibiscus	<i>Hibiscus moscheutos</i>
Zigzag iris	<i>Iris brevicaulis</i>
Virginia iris	<i>Iris virginica</i>
Turks cap	<i>Malvaviscus arboreus var. drummondii</i>
Frog fruit	<i>Phyla nodiflora</i>
Lanceleaf arrowhead	<i>Sagittaria lancifolia</i>
Gregg's mistflower	<i>Conoclinium greggii</i>
Swamp sunflower	<i>Helianthus angustifolius</i>
Cinnamon fern	<i>Osmunda cinnamomea</i>
Shield fern	<i>Dryopteris carthusiana</i>

<i>Woody</i>	
Buttonbush	<i>Cephalanthus occidentalis</i>
Indigo bush	<i>Amorpha fruticosa</i>
Black willow	<i>Salix nigra</i>

Wetland Community based on edge condition

Pond Edge: 6" above permanent pool level to 3" below

Bushy bluestem	<i>Andropogon glomeratus</i>
Waterhyssop	<i>Bacopa monnieri</i>
Emory sedge	<i>Carex emoryii</i>
Caric-sedge	<i>Carex frankii</i>
Buttonbush	<i>Cephalanthus occidentalis</i>
Inland sea oats	<i>Chasmanthium latifolium</i>
Flatsedge	<i>Cyperus odoratus</i>
Tall burhead	<i>Echinodorus berteroi</i>
Burhead	<i>Echinodorus cordifolius</i>
Spikerush (short)	<i>Eleocharis macrostachya</i>
Umbrella sedge	<i>Fuirena simplex</i>
Mallow	<i>Hibiscus lasiocarpus, Kosteletzkya virginica</i>
Soft rush	<i>Juncus effusus</i>
Cardinal flower	<i>Lobelia cardinalis</i>
Water clover	<i>Marsilea macropoda</i>
Big muhly	<i>Muhlenbergia lindheimeri</i>
Obedient plant	<i>Physostegia angustifolia</i>
Horned rush	<i>Rhynchospora colorata</i>
Palmetto	<i>Sabal minor</i>
Water daisy	<i>Spilanthes americana</i>
Easterngama grass	<i>Tripsacum dactyloides</i>

Marsh Zone 3"below-12" below

American waterwillow	<i>Justicia americana</i>
Arrow arum	<i>Peltandra virginica</i>
Arrowhead	<i>Sagittaria platyphylla</i>
Bulltongue	<i>Sagittaria graminea</i>
Canna lily (native)	<i>Canna flaccida</i>
Crimson-eyed rosemallow (1-9E as well)	<i>Hibiscus moscheutos</i>
Flatstem spikerush	<i>Eleocharis macrostachya</i>
Halberdleaf rosemallow (1-9E as well)	<i>Hibiscus laevis</i>
Hard-stem bulrush	<i>Schoenoplectus acutus</i>
Horned pondweed (1-9G as well)	<i>Zanichellia palustris</i>
Mudplantain	<i>Heteranthera limosa</i>
Pickrelweed	<i>Pontederia cordata</i>
Slender spikerush	<i>Eleocharis acicularis</i>
Spikerush (tall)	<i>Eleocharis</i>
Three-square bulrush	<i>Schoenoplectus americanus</i>

Deep Water Zone 12" below-36" below

American frog's bit	<i>Limnobium spongia</i>
American pondweed	<i>Potamogeton nodosus</i>
Coontail	<i>Ceratophyllum demersum</i>
Delta Arrowhead	<i>Sagittaria platyphylla</i>
Fanwort	<i>Cabomba caroliniana</i>
Giant bulrush	<i>Schoenoplectus americanus</i>
Giant bulrush	<i>Schoenoplectus</i>
Pondweed	<i>Potamogeton pectinatus</i>
Sago pondweed	<i>Stuckenia pectinata</i>
Slender pondweed	<i>Potamogeton pusillus</i>
Southern naiad	<i>Najas guadalupensis</i>
Water lily	<i>Nymphaea</i>
Water star grass	<i>Heteranthera dubia</i>
Water stargrass	<i>Heteranthera dubia</i>
Water-naiad	<i>Najas guadalupensis</i>
Wild celery	<i>Vallisneria americana</i>

Stormwater Features

<u>Trees/Shrubs</u>	
Possumhaw holly	<i>Ilex decidua</i>
Sycamore	<i>Plantanus occidentalis</i>
Bald cypress	<i>Taxodium distichum</i>
<u>Grasses/Forbs</u>	
Inland sea oats	<i>Chasmanthium latifolium</i>
Bushy bluestem	<i>Andropogon glomeratus</i>
Upland switchgrass	<i>Panicum virgatum</i>
Indian grass	<i>Sorghastrum nutans</i>
Sedges	<i>Carex spp.</i>
Obedient plant	<i>Physostegia virginiana</i>
Goldenrod	<i>Solidago altissima</i>

Native lawn- Habiturf

Buffalograss	<i>Bouteloua dactyloides</i>
Curly mesquite	<i>Hilaria belangeri</i>
Blue gramma	<i>Bouteloua gracilis</i>

Tallgrass Savanna Community

<u>Trees</u>	
Live Oak	<i>Quercus virginiana</i>
Post Oak	<i>Quercus margarettiae</i>
Cedar elm	<i>Ulmus crassifolia</i>
American elm	<i>Ulmus americana</i>
Sugar hackberry	<i>Celtis laevigata</i>
Sycamore	<i>Plantanus occidentalis</i>
Texas ash	<i>Ulmus americana</i>
Eastern cottonwood	<i>Populus deltoides</i>
Bur oak	<i>Quercus macrocarpa</i>
Shumard oak	<i>Quercus shumardii</i>
<u>Grasses</u>	
big bluestem	<i>Andropogon gerardii</i>
canada wildrye	<i>Elymus canadensis</i>
florida paspalum	<i>Paspalum floridanum</i>
indiangrass	<i>Sorghastrum nutans</i>
little bluestem	<i>Schizachyrium scoparium</i>
rustyseed paspalum	<i>Paspalum langei</i>
Green sprangletop	<i>Leptochloa dubia</i>
switchgrass	<i>Panicum virgatum</i>
virginia wildrye	<i>Elymus virginicus</i>
Cane bluestem	<i>Bothriochloa barbinodis</i>
Silver bluestem	<i>Bothriochloa saccharoides</i>

Upland switchgrass	<i>Panicum virgatum</i>
Eastern gamagrass	<i>Tripsacum dactyloides</i>
Indian blanket	<i>Gaillardia pulchella</i>
<i>Forbs</i>	
Maximillian sunflower	<i>Helianthus maximiliani</i>
Standing cypress	<i>Ipomopsis rubra</i>
Indian paintbrush	<i>Castilleja indivisa</i>
American basketflower	<i>Centaurea americana</i>
Golden-wave	<i>Coreopsis basalis</i>
Lanceleaf coreopsis	<i>Coreopsis lanceolata</i>
Plains coreopsis	<i>Coreopsis tinctoria</i>
Scrambled eggs	<i>Corydalis curvisiliqua</i>
Illinois bundle flower	<i>Desmanthus illinoensis</i>
Purple coneflower	<i>Echinacea angustifolia</i>
Purple coneflower	<i>Echinacea purpurea</i>
Engleman daisy	<i>Engelmannia pinnatifida</i>
Eryngo	<i>Eryngium leavenworthii</i>
Rattlesnake master	<i>Eryngium yuccifolium</i>
White Gaura	<i>Gaura lindheimeri</i>
Maximillian sunflower	<i>Helianthus maximiliani</i>
Tall goldenrod	<i>Solidago altissima</i>
Horsemint	<i>Monarda citriodora</i>
Snow on the mountain	<i>Euphorbia marginata</i>

Midgrass Prairie community

<u>Grasses</u>	
Native American Seed Midway mix	Mixed grasses
Purple threeawn	<i>Aristida purpurea</i>
Silver bluestem	<i>Bothriochloa laguroides</i>
Sideoats grama	<i>Bouteloua curtipendula</i>
Blue grama	<i>Bouteloua gracilis</i>
Buffalograss	<i>Buchloe dactyloides</i>
Prairie wildrye	<i>Elymus candensis</i>
Sand lovegrass	<i>Eragrostis trichodes</i>
Green sprangletop	<i>Leptochloa dubia</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Indiangrass	<i>Sorghastrum nutans</i>
Texas wintergrass	<i>Nasella leucothricha</i>
<u>Forbs</u>	
Indian paintbrush	<i>Castilleja indivisa</i>
Partridge pea	<i>Chamaecrista fasciculata</i> var. <i>fasciculata</i>
Plains coreopsis	<i>Coreopsis tinctoria</i>
Englemann daisy	<i>Engelmannia pinnatifida</i>
Indian blanket	<i>Gaillardia pulchella</i>
White gaura	<i>Gaura lindheimeri</i>
Texas yellowstar	<i>Lindheimera texana</i>
Bluebonnet	<i>Lupinus texensis</i>
Pink evening primrose	<i>Oenothera speciosa</i>
Mexican hat	<i>Ratibida columnifera</i>
Clasping coneflower	<i>Rudbeckia amplexicaulis</i>
Black-eyed Susan	<i>Rudbeckia hirta</i>
Tropical sage	<i>Salvia coccinea</i>
Mealy bluesage	<i>Salvia farinacea</i>

Dense Wooded Community

<u>Trees</u>	
Live Oak	<i>Quercus virginiana</i>
Pecan	<i>Carya illinoensis</i>
Post Oak	<i>Quercus margarettiae</i>
Cedar elm	<i>Ulmus crassifolia</i>
American elm	<i>Ulmus americana</i>
Sugar hackberry	<i>Celtis laevigata</i>
Sycamore	<i>Plantanus occidentalis</i>
Texas ash	<i>Ulmus americana</i>
Eastern cottonwood	<i>Populus deltoides</i>
Bur oak	<i>Quercus macrocarpa</i>
Shumard oak	<i>Quercus shumardii</i>
<u>Understory: grass/forbs</u>	
American beautyberry	<i>Callicarpa americana</i>
Turks cap	<i>Malvaviscus arboreus var. drummondii</i>
Palmetto	<i>Sabal minor</i>
Inland sea oats	<i>Chasmanthium latifolium</i>
Sedge species	<i>Carex spp.</i>
Nimblewill	<i>Muhlenbergia schreberi</i>
Foxtail grass	<i>Setaria scheelei</i>
Texas bluegrass	<i>Poa arachnifera</i>
Texas wintergrass	<i>Nassella leucotricha</i>
Heartleaf skullcap	<i>Scutellaria ovata</i>
Tropical sage	<i>Salvia coccinea</i>
Pigeonberry	<i>Rivina humilis</i>
Horseherb	<i>Calyptocarpus vialis</i>
Giant spiderwort	<i>Tradescantia gigantea</i>
Fall obedient plant	<i>Physostegia virginiana</i>
Frogfruit	<i>Phyla nodiflora</i>
Native American Seed shade wildflower mix	http://www.seedsources.com/
Native American Seed shade grass mix	http://www.seedsources.com/

Fields Buildings and Plazas**border plant species for invasive species protection and water quality**

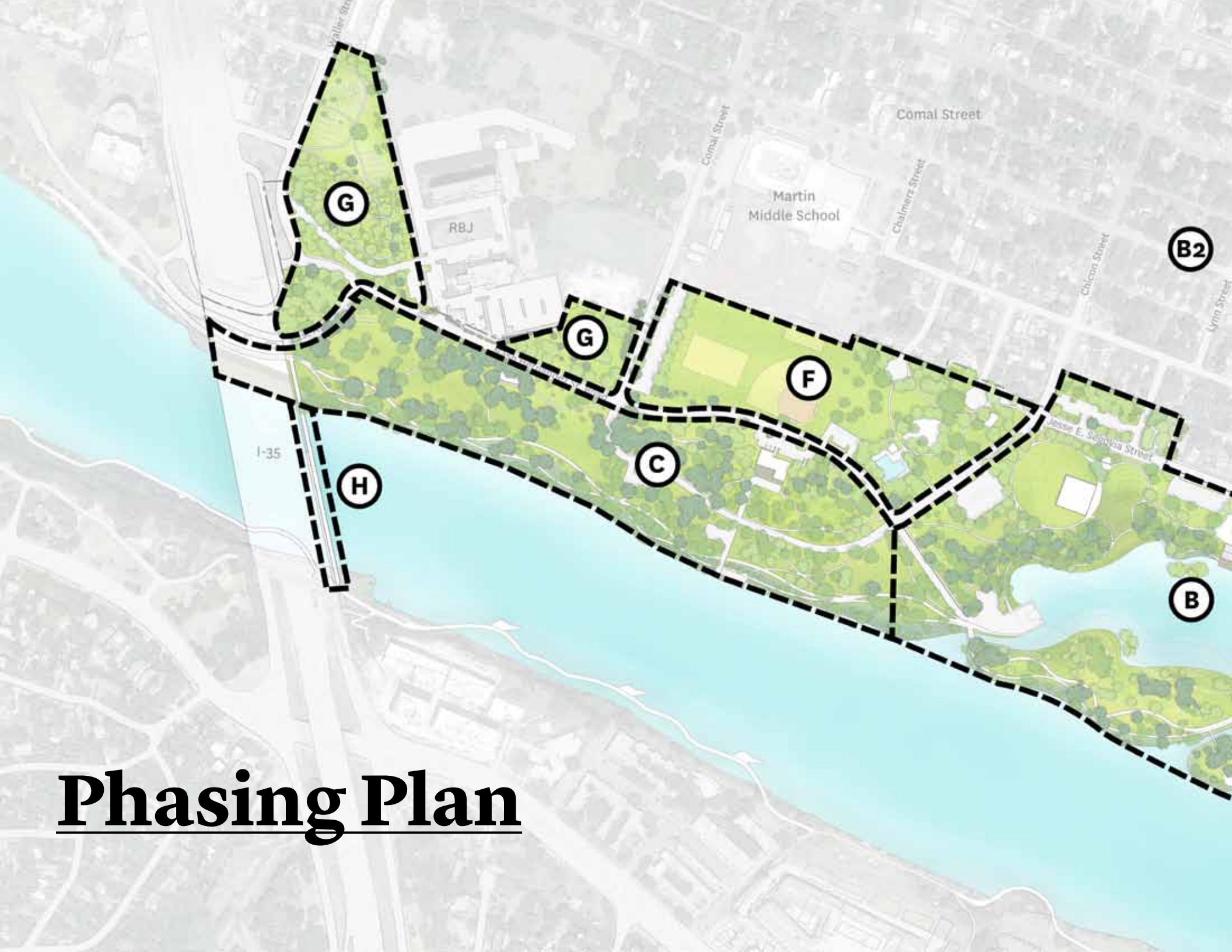
<u>Trees</u>	
Live Oak	<i>Quercus virginiana</i>
Pecan	<i>Carya illinoensis</i>
Post Oak	<i>Quercus margarettiae</i>
Cedar elm	<i>Ulmus crassifolia</i>
American elm	<i>Ulmus americana</i>
Sugar hackberry	<i>Celtis laevigata</i>
Sycamore	<i>Plantanus occidentalis</i>
Texas ash	<i>Ulmus americana</i>
Eastern cottonwood	<i>Populus deltoides</i>
Bur oak	<i>Quercus macrocarpa</i>
Shumard oak	<i>Quercus shumardii</i>
<u>Shrubs</u>	
Cenizo	<i>Leucophyllum frutescens</i>
Agarita	<i>Mahonia trifoliolata</i>
Wax myrtle	<i>Morella cerifera</i>
<u>Grasses/forbs</u>	
Lindheimer's muhly	<i>Muhlenbergia lindheimeri</i>
Pine muhly	<i>Muhlenbergia dubia</i>
Gulf muhly	<i>Muhlenbergia capillaris</i>
Inland sea oats	<i>Chasmanthium latifolium</i>
Bushy bluestem	<i>Andropogon glomeratus</i>
Upland switchgrass	<i>Panicum virgatum</i>
Indian grass	<i>Sorghastrum nutans</i>
Sedges	<i>Carex spp.</i>
Obedient plant	<i>Physostegia virginiana</i>
Goldenrod	<i>Solidago altissima</i>

Permaculture and Gardens
border plant species for water quality

<i>Grasses/forbs</i>	
Inland sea oats	<i>Chasmanthium latifolium</i>
Bushy bluestem	<i>Andropogon glomeratus</i>
Upland switchgrass	<i>Panicum virgatum</i>
Indian grass	<i>Sorghastrum nutans</i>
Sedges	<i>Carex spp.</i>
Obedient plant	<i>Physostegia virginiana</i>
Goldenrod	<i>Solidago altissima</i>

Appendix C

Phasing and Cost Estimate

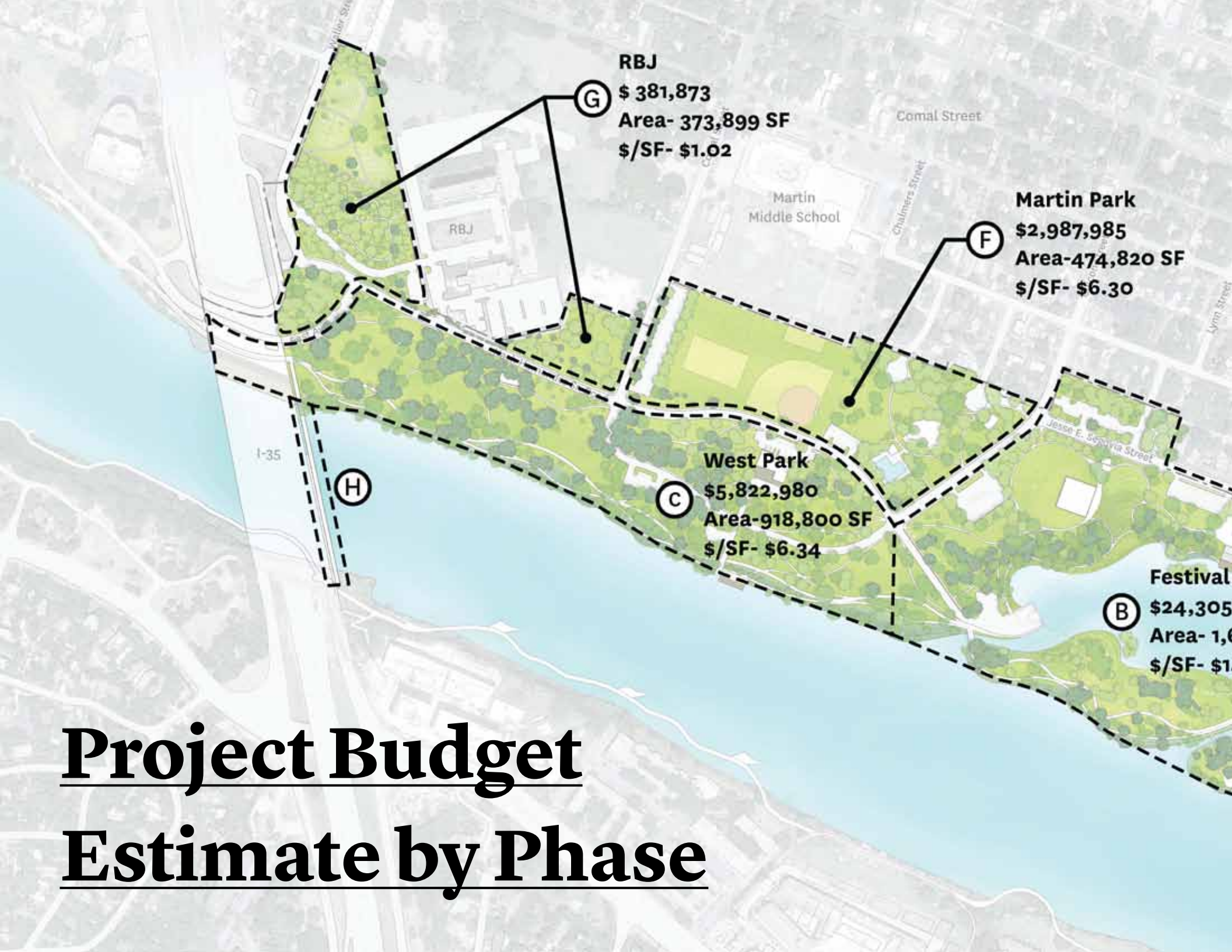


Phasing Plan



LEGEND

- A. Austin Energy Connections & Fields
- B. Festival Beach
- B2. Overall Park Improvements
- C. West Park
- D. Cooling Pond
- E. Metz Park
- F. Martin Park
- G. RBJ Center
- H. Bridge Connections



RBJ
\$ 381,873
Area- 373,899 SF
\$/SF- \$1.02

Martin Park
\$2,987,985
Area-474,820 SF
\$/SF- \$6.30

West Park
\$5,822,980
Area-918,800 SF
\$/SF- \$6.34

Festival
\$24,305
Area- 1,000 SF
\$/SF- \$24.30

Project Budget Estimate by Phase



Metz Park
\$1,761,183
Area-277,493 SF
\$/SF- \$6.35

(B2) Overall Park Improvements
\$3,120,987

(D) Cooling Pond
\$3,115,955
Area-457,315 SF
\$/SF- \$6.81

(A) Austin Energy Connections & Field
\$18,013,118
Area-1,087,508 SF
\$/SF- \$16.56

Beach
,476
675,426 SF
4.51

Austin Energy Substation

(H)



Project Budget Estimate by Phase

	Austin Energy Connections & Ball Fields Phase A	Park-Wide Improvements Phase B2	Festival Beach Phase B	West Park Phase C	Cooling Pond Phase D	Metz Park Phase E	Martin Phase F	RBJ Phase G	Lady Bird Lake Pedestrian Bridges Phase H	TOTAL
Roads	\$2,102,993.00		\$971,416.00	\$469,858.00						\$3,544,267.00
Paths/Trails	\$1,705,618.00		\$1,843,503.00	\$1,055,778.00	\$641,132.00	\$321,355.00	\$405,347.00	\$37,499.00		\$6,010,232.00
Buildings & Structures	\$5,557,206.00		\$2,279,288.00	\$2,080,831.00	\$1,114,600.00	\$195,200.00	\$366,572.00		\$16,737,930.00	\$28,331,627.00
Playgrounds & Sport Fields	\$3,293,663.00		\$653,741.00			\$678,054.00	\$1,408,182.00			\$6,033,640.00
Earthwork	\$298,831.00		\$10,234,840.00	\$655,260.00	\$208,500.00	\$83,400.00	\$68,100.00	\$118,000.00		\$11,666,931.00
Planting	\$268,125.00		\$200,000.00	\$296,657.50	\$120,312.50	\$35,937.50	\$92,187.50	\$100,000.00		\$1,113,220.00
Site Improvements & Art	\$1,184,059.00	\$2,496,790.00	\$3,261,593.00	\$100,000.00	\$408,220.00	\$95,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$7,695,662.00
TOTAL	\$14,410,495.00	\$2,496,790.00	\$19,444,381.00	\$4,658,384.50	\$2,492,764.50	\$1,408,946.50	\$2,390,388.50	\$305,499.00	\$16,787,930.00	\$64,395,579.00
25 % Contingency TOTAL	\$18,013,118.00	\$3,120,987.00	\$24,305,476.00	\$5,822,980.00	\$3,115,955.00	\$1,761,183.00	\$2,987,985.00	\$381,873.00	\$20,984,912.00	\$80,494,474.00

Appendix D

Alternative Holly, Riverview, and Pedernales Connections

Improve path and trail connections around the Austin Energy property

(Proposed Alternative)

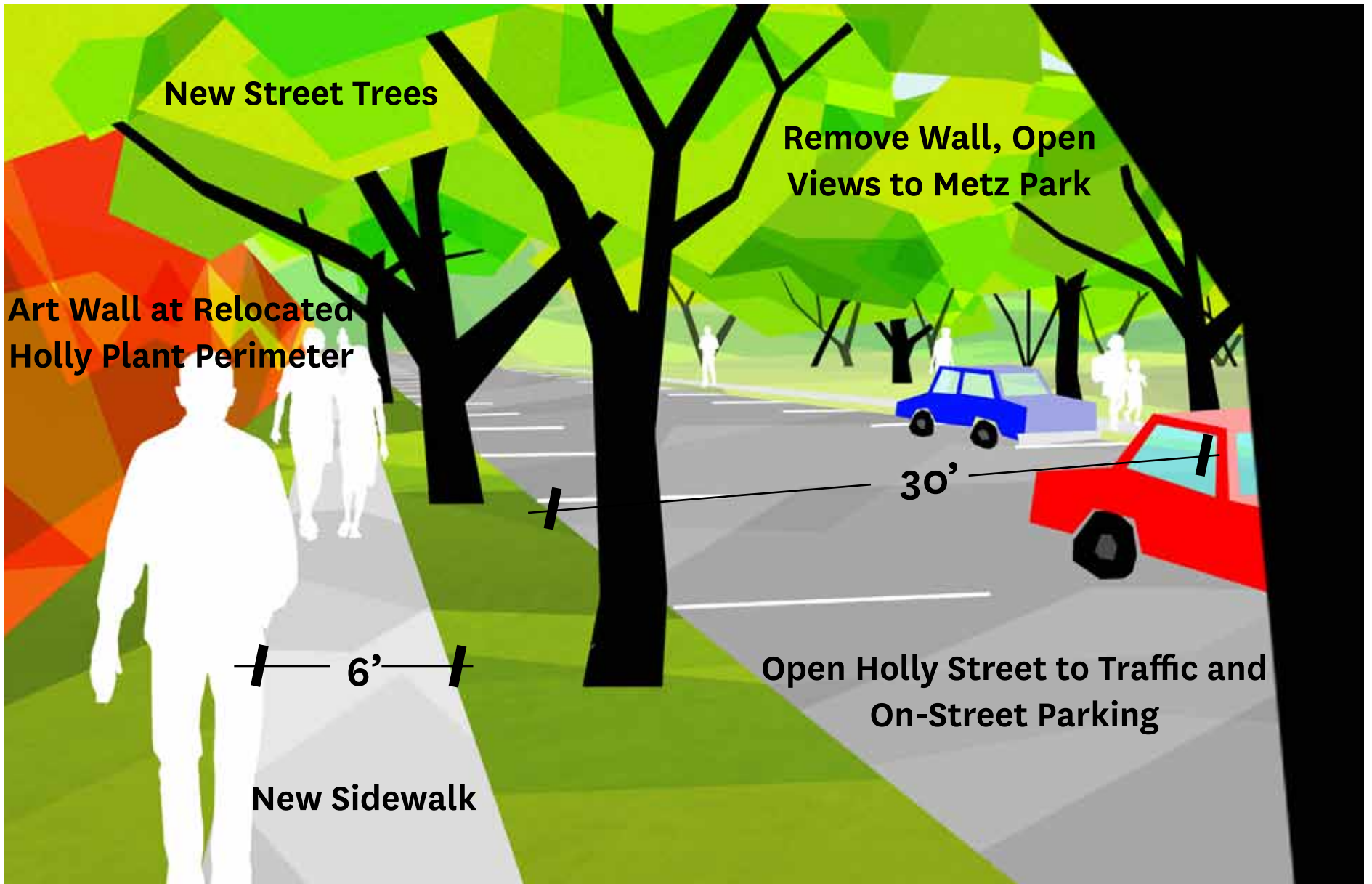
In order to address neighborhood concerns about vehicles cutting through the park between Pedernales and Holly or Riverview Streets, an alternative is proposed that restricts Pedernales to bicycle and pedestrian circulation, but allows cars to travel around the Austin Energy Substation between Holly and Riverview Streets. Allowing cars to take this route will support activities in the Lakeside Warehouses for Community Use, including service vehicles, disabled parking spaces and drop-off. Parking can also be provided close to this facility along Riverview and Holly Streets, and unimpeded access will be possible for Austin Energy service vehicles and emergency services. There will be no crossing conflict between cars and the major pedestrian and bicycle trails.

LEGEND

1. Existing Parking
2. Canoe Launch
3. Playground
4. Picnic Garden
5. Concessions
6. Viewpoint
7. ADA Accessible Paths
8. Pedestrian, Bicycle and Service Path
9. Park Driveway with Parking
10. Steps & Deck
11. Lakeside Warehouses for Community Use
12. Pier
13. Enhanced Existing Park Facilities
14. Ball Fields
15. Covered Basketball Court
16. Wetland Habitat Islands



Figure 33.
East Park Illustrative
Plan



Holly Street Extension
Alternative Proposed View

Proposed Parking Spaces
Alternative Diagram



620 Parking Spaces Proposed within Holly Shores

The alternative plan allows for approximately an extra 120 parking spaces on Holly and Riverview Streets, giving a total of 620 spaces distributed throughout the park.