

LAKE PFLUGERVILLE | PRELIMINARY DESIGN REPORT



JUNE | 2019

PAGE INTENTIONALLY LEFT BLANK

Acknowledgments

The Lake Pflugerville Preliminary Design Report has been developed by the City of Pflugerville with the technical assistance of Halff Associates.

PREPARED FOR:

Victor Gonzales | Mayor

Doug Weiss | Council Place 1

Jeff Marsh | Council Place 2

Omar Pena | Council Place 3 - Mayor Pro Tem

Rudy Metayer | Council Place 4

Mike Heath | Council Place 5

Jim McDonald | Council Place 6



CONTRIBUTIONS BY:

Parks and Recreation Commission:

Patrick Clynch

Kimberly Castillo | Secretary

Scott Langer

Raul Capetillo | Vice Chair

Lisa Ely | Alternate

Barbara Woodworth

Michael Owens | Chair

Sebastian Carzola | Student Member

City of Pflugerville Staff:

Sereniah Breland | City Manager

Trey Fletcher | Assistant City Manager

Sheila Wiora | Interim Parks and Recreation Director

Aileen Dryden | Parks Development Manager

PREPARED BY:

Brandon Hay, PLA, ASLA, CLARB | Project Manager

Tyler Richburg, PLA, LI, ASLA, CLARB

Phillip Hammond, ASLA

Dan Franz, PE, CFM

Paige Young, EIT



PAGE INTENTIONALLY LEFT BLANK

Table of Contents

INTRODUCTION	1	LIST OF MAPS	
		Map 1: Lake Pflugerville Master Plan	6
SECTION 1: EXISTING CONDITIONS		Map 2: Lake Pflugerville - Trailhead Area	8
South Side	2	Map 3: Lake Pflugerville - Beach Area	10
Beach	3	Map 4: Lake Pflugerville - Boardwalk Trail Area	12
Trailhead	4	Map 5: Lake Pflugerville - Phase 01 Full	14
Biehle House	5	Map 6: Lake Pflugerville - Biehle House	20
SECTION 2: PHASING PLAN	6	Map 7: Lake Pflugerville - Biehle House Ph. 1	22
Trailhead	8	LIST OF TABLES	
Beach Area	10	Table 1: Trailhead OPCC	9
Boardwalk Trail	12	Table 2: Beach Area OPCC	11
Phase 1 Master Plan	14	Table 3: Boardwalk Trail OPCC	13
SECTION 3: M.O.R.E. PLAN	16	Table 4: M.O.R.E. Plan - Boardwalk	16
SECTION 4: EXECUTIVE SUMMARY	19	Table 5: M.O.R.E. Plan - Beach	17
SECTION 5: BIEHLE HOUSE	20	Table 6: M.O.R.E. Plan - Trailhead	18
SECTION 6: APPENDICES	24	Table 7: Biehle House OPCC	21
		Table 8: Biehle House Phase 1 OPCC	23
		LIST OF FIGURES	
		Figure 1: Lake Pflugerville - Beach Area	11
		Figure 2: Lake Pflugerville - Boardwalk Area	13
		Figure 3: Biehle House - Event Lawn Area	21
		Figure 4: Biehle House - Community Gardens	23

PAGE INTENTIONALLY LEFT BLANK

Introduction

Lake Pflugerville was constructed in the early 2000's to provide a new source of drinking water for the citizens of Pflugerville. Shortly after its construction, the city designed and developed a small park and beach to give the residents an opportunity to interact with the lake. The improvements included a parking lot, restroom, small playground, picnic pavilions, a loop trail around the lake, and a kayak rental facility.

In 2014, Halff Associates was selected to prepared the Lake Pflugerville Master Plan for the City and identified conceptual layouts with associated cost estimates for ultimate recreational development. As part of the preparation and completion of the Master Plan, Halff helped facilitate public open houses and forums with residents, the City Parks Boards and City Council. Items such as expansion of existing parking, additional restroom facilities, and beach expansions were considerations mentioned by numerous citizens and user groups.

Halff was again selected as part of the request for qualifications in 2018 for conducting more detailed layouts, cost estimates and project phasing determination based on available City funding. The consultant team has further analyzed each portion of the existing Lake Pflugerville facility and further detailed conceptual facility designs and updated construction cost projections. This report has identified constraints which will play a role in ultimate phasing of the future park improvements as well as the Biehle House Property which was not part of the original Master Plan.

The following sections will identify such constraints for specific sections of the lake as well as illustrate proposed recommendations for phasing of improvements.

Existing Conditions

SOUTH SIDE

During the most recent Master Plan process, Pflugerville residents requested additional beach areas around Lake Pflugerville. The plan proceeded to show the south side of Lake Pflugerville to have improved parking, construction of a defined bulkhead, pier facilities, restrooms and an outdoor amphitheater.

In response, Halff considered developing the south side of Lake Pflugerville in order to increase the beach area before concluding that the south shore is not conducive for this at this time due to the following reasons:

PREVAILING WINDS

Due to prevailing winds from the southwest, this would create an ongoing maintenance issue for the beach at this time. Winds from the south could pull sand from the beach out to the middle of the lake. As development occurs to the south of the lake, this will help provide a physical wind break.

WASTEWATER FACILITIES

The largest issue with the southern side of the lake is the absence of wastewater facilities to accommodate restroom improvements. In order to provide amenities on the south side of the Lake, restroom facilities would be required to accommodate the increased number of users. Furthermore, the elevation of the south side beach is lower than the wastewater utilities at both the current Beach Park and the Lakeside at Villages of Hidden Lakes neighborhood. This would make it impossible to connect the south side restrooms to these existing systems by conventional gravity flow. The distance between the south side of the lake and these two wastewater systems would also be too far to connect feasibly.

Ultimately, gravity wastewater service for the south

side of Lake Pflugerville is to be provided by the Pflugerville wastewater interceptor which would route effluent to the existing Sorento wastewater interceptor and the Carmel/Sorento lift station facility. Preliminary construction costs for the necessary expansions of the Sorento interceptor as well as the initial construction of the Pflugerville interceptor are greater than the current City allocated funding for the park.

ROAD WIDENING

In addition to wastewater service issues, with the anticipated widening of Pflugerville Parkway to four lanes, access to the southern portion of the Lake will be limited to specific locations. It has yet to be determined if the city portions of the roadway will be widened on the Lake side of the road.

In conclusion, any improvements to the south side of the lake are suggested to be postponed until further development of the Pflugerville Parkway widening project as well as the wastewater interceptors are completed.



PICTURE 01 | LAKE PFLUGERVILLE - SOUTH SIDE TRAIL

BEACH

The existing beach facility is not large enough to handle the volume of users during the peak seasons. The 2014 Master Plan proposed expanding the existing beach, providing additional parking, and implementing a new active recreation area. The park site currently lacks sufficient parking and restroom facilities for the busy summer months. The park's only vehicular access point is a road connecting the parking lot to Weiss Lane. Users can also access the beach on foot through the Lake Pflugerville Trail or the Villages of Hidden Lake neighborhood.

The existing topography conveys drainage from the parking lot to an open field to the immediate south. This unused land does present an opportunity for parking lot expansion while also serving as a natural vegetated filter strip.

The park restrooms are serviced by water and wastewater lines coming in from the west. The size and depth of the lines presents opportunities for additional restrooms if so desired on the north side of the lake. Due to the water and wastewater alignments, placement of a second restroom facility would be optimal farther to the west of the current restrooms.

Given the available space for amenity and parking expansion, enhancements to the existing beach park are recommended for the first phase of development.



PICTURE 02 | LAKE PFLUGERVILLE - BEACH



PICTURE 04 | LAKE PFLUGERVILLE - PAVILION



PICTURE 03 | LAKE PFLUGERVILLE - RESTROOM



PICTURE 05 | LAKE PFLUGERVILLE - ACCESS

TRAILHEAD

The 2014 Master Plan identified a potential multipurpose trailhead facility along Silent Harbor Loop. This trailhead would provide a small parking lot, restroom, and trail access to the park. The identified portion of land has existing storm sewer, wastewater, and water utilities in close proximity which makes this an excellent location for another restroom facility. It is important to note that while the location provides adequate utility service, the storm line crosses diagonally through the proposed site. The design of a trailhead in this location should take careful note of the storm line location as to not place the restroom building on top of it. Drive access for the trailhead location is possible at two locations in order to satisfy the City's Unified Development Code guidelines.

Given the proposed location of this trailhead, open land adjacent to the parking facility may be used to treat stormwater runoff. A second treatment option is to utilize the 48 inch storm drain if so desired.

By providing additional trailheads around the perimeter of the lake, this will provide trail access without competing with the traffic at the beach location. Given the available space as well as the existence of utility infrastructure, this trailhead is recommended within the first phase of development.



PICTURE 06 | PROPOSED TRAILHEAD - WESTERN VIEW



PICTURE 07 | PROPOSED TRAILHEAD



PICTURE 08 | PROPOSED TRAILHEAD

BIEHLE HOUSE

The property for the proposed Biehle House construction is located to the west of Becker Farm Road. Currently the property contains a house, a detached garage, fencing, a small stock pond, and a small grove of large trees. A gravel drive connects the homestead to Becker Farm Road without any parking facilities. The existing topography of the site contains a gentle slope from north to south, conveying water to the stock pond immediately adjacent to the lake. An existing concrete storm culvert is located directly under the entry driveway, which handles runoff from the roadway.

The property is currently served by City water and a wastewater is handled by a septic system. While there is no wastewater serving the property, the nearest feasible wastewater system for the property is an 8-in main currently under construction at Becker Farm neighborhood 500' to the north. This wastewater system has the capacity to accommodate the flow from Biehle House, but due to topographic constraints, gravity connection is not possible and a grinder pump is required. Ultimately wastewater service at the Biehle tract would need to be from the future Pflugerville wastewater Interceptor, still years away.

Per the City of Pflugerville Master Transportation Plan, Hidden Lakes Boulevard is anticipated to be expanded to the south and connect to Pflugerville Parkway. This future road expansion is anticipated to occur on the west side of the Biehle property therefore allowing two possible driveway connections; to Hidden Lakes Blvd and to Becker Farm Road. To limit the number of conflict points for vehicular and pedestrian access, it is recommend that drive access to Becker Farm Road for the Biehle property be situated directly across from Hagerty Crossing.

The Biehle House Property concepts that are part of this report are important to show what is possible at this location, but the current budget does not include funds for most of the proposed improvement. Furthermore, necessary utility improvements may be costly due to site constraints.

The following sections in this report will provide further detailed cost breakdowns of all identified areas of the Lake as well as illustrate further defined preliminary concepts of designs which could be considered for Phase One implementation.



PICTURE 09 | BIEHLE HOUSE - EASTERN VIEW



PICTURE 10 | BIEHLE HOUSE - FIELD



PICTURE 11 | BIEHLE HOUSE - POND

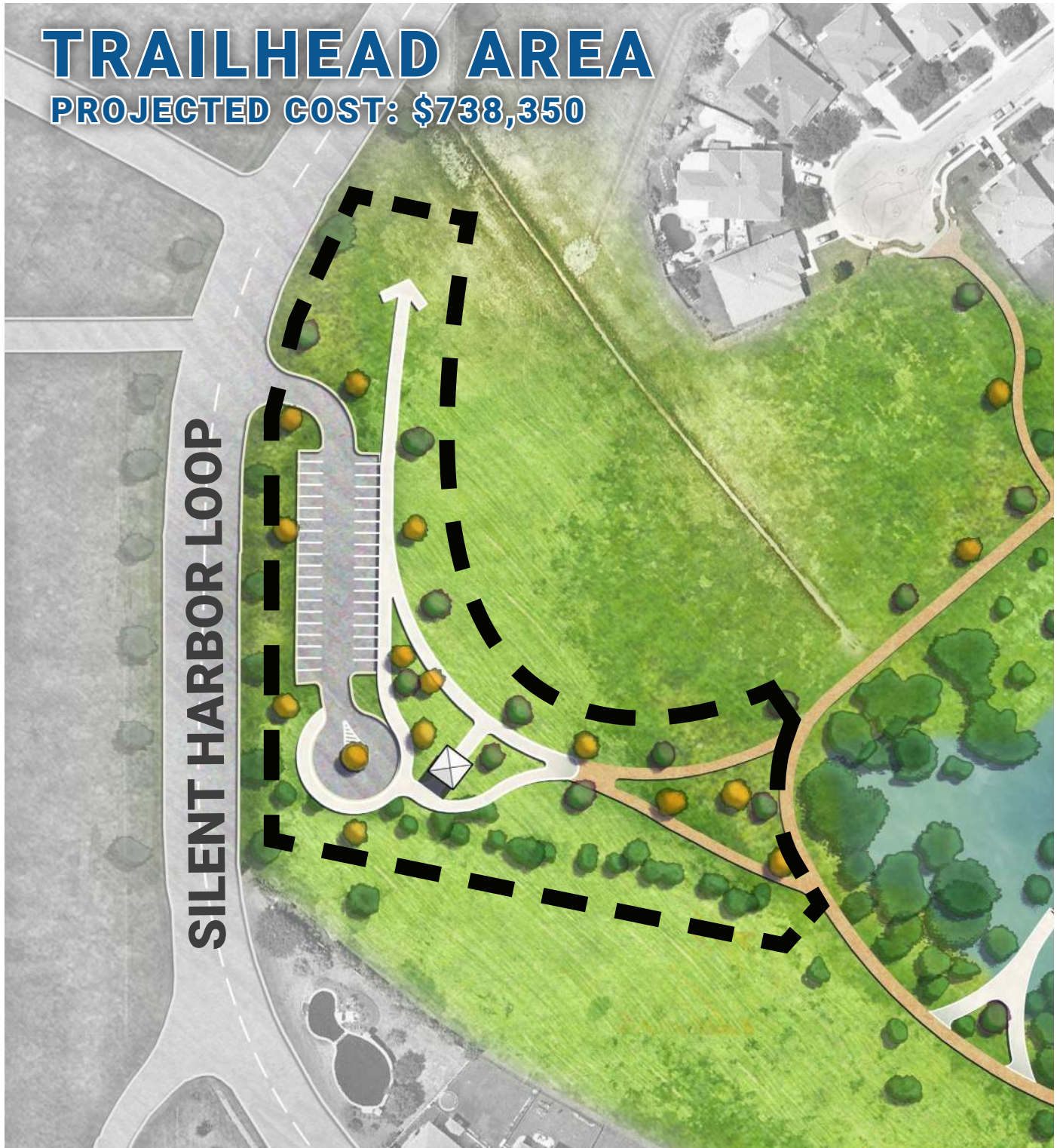
LAKE PFLUGERVILLE | MASTER PLAN





Master Phasing Plan

MAP 02 | LAKE PFLUGERVILLE - TRAILHEAD AREA



TRAILHEAD

Construction of a western trailhead along Silent Harbor Loop will allow for additional opportunities to access the park. Each area of the proposed master plan provides a different experience and activities around the lake. This trailhead will allow users to quickly access the loop trail and future boardwalks that provide educational opportunities of the wetlands on the western portion of the lake. Trailhead improvements include a new parking facility, small restroom, and trail access to the park and connecting neighborhood trail.

Another benefit of this additional trailhead is that it effectively splits the load of the park users as it provides a location other than the beach where users can access the park and have support facilities. It is recommended that the first phase of development include this trailhead.

TABLE 01 | TRAILHEAD - OPINION OF PROBABLE COST

Trailhead (Western Parking Lot and Trail to Esplanade)	
Walkways and Site Structures	\$69,750
Parking (est. 40 spaces) and Infrastructure	\$350,000
New Restroom Facilities	\$200,000
Lighting Furnishings	\$47,400
Landscape Miscellaneous Improvements	\$71,200
TOTAL	\$738,350

** Costs shown are in 2019 dollars and are not an order of magnitude, pre-design level. Construction contingency and soft costs are not shown here. Refer to full cost estimate at end of document for all additional design and contingency costs. All costs are prior to specific site assessments and any design will require more detailed evaluations to determine specific costs for each specific segment.*

MAP 03 | LAKE PFLUGERVILLE - BEACH AREA



• • • • • * Areas marked as not included in Phase 01.

THE BEACH

Currently the beach area is the only opportunity for park users to gather and interact with the lake where there are associated support facilities. Due to the limited space and all users being consolidated at this location, the current facilities are unable to support the demand. The consultant team recommends that the first phase of development include items highlighted in the cost estimate below. Key items that the first phase should try to incorporate are expanding the parking

facilities, addition of a second restroom, introduction of a splash pad, shade structures, and expansion of the beach area. It's important to note that not all of the proposed beach improvements may be accounted for within the first phase of development. Additional items such as the new playground structures, expanded beach front, and re-purposing the existing restroom may occur in future phases.

TABLE 02 | BEACH AREA - OPINION OF PROBABLE COST

Beach Area Phase 1 (Parking Lot and Esplanade)	
New Restroom Facility Refurbishments	\$450,000
New Splash Pad	\$407,000
Infrastructure and Parking (est. 100 additional spaces)	\$797,500
Shade Structures	\$500,000
Walkways Furnishings Additional Site Structures	\$671,500
Landscape Electrical Miscellaneous Improvements	\$617,000
TOTAL	\$3,443,000

** Costs shown are in 2019 dollars and are not an order of magnitude, pre-design level. Construction contingency and soft costs are not shown here. Refer to full cost estimate at end of document for all additional design and contingency costs. All costs are prior to specific site assessments and any design will require more detailed evaluations to determine specific costs for each specific segment.*

FIGURE 01 | LAKE PFLUGERVILLE - BEACH AREA



MAP 04 | LAKE PFLUGERVILLE - BOARDWALK TRAIL AREA



BOARDWALK TRAIL

Nestled into the northwestern corner of the lake resides a natural wetland containing the right habitat of wetland vegetation and animals alike. The master plan proposes to weave a boardwalk system into the existing wetlands to allow for park users to safely engage with the flora and fauna with minimal disturbance.

While a much desired opportunity for the lake, the boardwalk systems are not recommended within the first phase of development.

The boardwalk network is built on a system of drilled piers into the soil below so that water and wildlife can freely flow under the walking surface. Located in the center are two covered overlooks for wildlife viewing.

TABLE 03 | BOARDWALK TRAIL - OPINION OF PROBABLE COST

Boardwalk Trail Area	
Hardscape Site Structures	\$2,100,000
Wetland landscaping Site furnishings	\$50,000
TOTAL	\$2,150,000

** Costs shown are in 2019 dollars and are not an order of magnitude, pre-design level. Construction contingency and soft costs are not shown here. Refer to full cost estimate at end of document for all additional design and contingency costs. All costs are prior to specific site assessments and any design will require more detailed evaluations to determine specific costs for each specific segment.*

FIGURE 02 | LAKE PFLUGERVILLE - BOARDWALK AREA



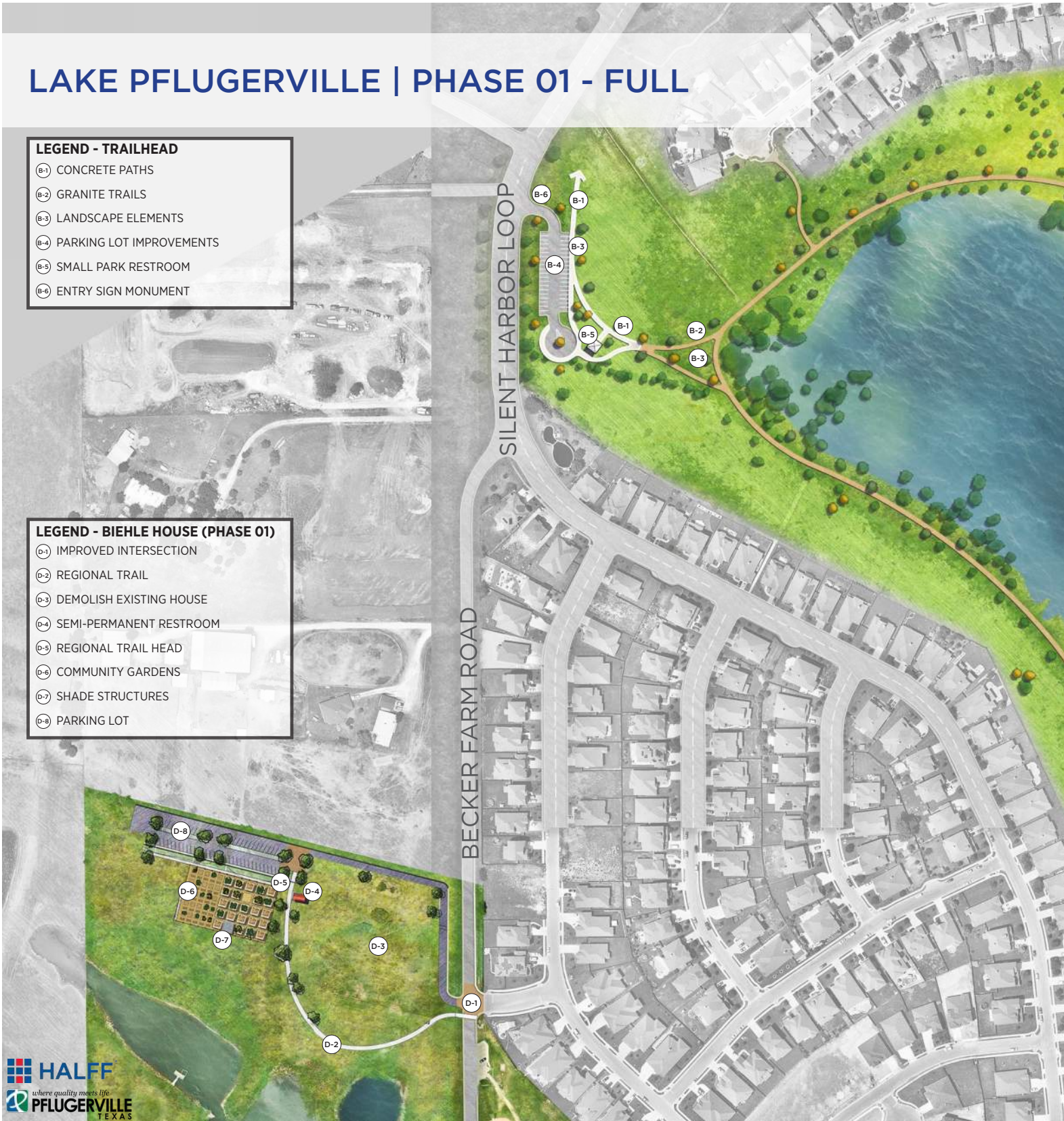
LAKE PFLUGERVILLE | PHASE 01 - FULL

LEGEND - TRAILHEAD

- (B-1) CONCRETE PATHS
- (B-2) GRANITE TRAILS
- (B-3) LANDSCAPE ELEMENTS
- (B-4) PARKING LOT IMPROVEMENTS
- (B-5) SMALL PARK RESTROOM
- (B-6) ENTRY SIGN MONUMENT

LEGEND - BIEHLE HOUSE (PHASE 01)

- (D-1) IMPROVED INTERSECTION
- (D-2) REGIONAL TRAIL
- (D-3) DEMOLISH EXISTING HOUSE
- (D-4) SEMI-PERMANENT RESTROOM
- (D-5) REGIONAL TRAIL HEAD
- (D-6) COMMUNITY GARDENS
- (D-7) SHADE STRUCTURES
- (D-8) PARKING LOT





M.O.R.E. PLAN

To compliment the analysis and recommendations of this plan, a Maintenance, Operations, Revenue, and Expenditure (M.O.R.E.) Plan has been generated for the first phase of development. This plan is to serve as a tool for city staff to evaluate the internal needs and expectations of developing the park. Manpower or projections and expected operating costs were generated in coordinating discussions with parks and recreation staff.

legend
M: Staff Maintenance personnel
C: Contracted position

TABLE 04 | M.O.R.E PLAN - BOARDWALK

BOARDWALK AREA							
LOCATION TASKS	UNIT	TOTAL UNITS	HOURS/ UNIT	FREQ. PER YEAR	TOTAL NUMBERS OF HOURS	NUMBER OF STAFF	PERSONNEL TYPE
Trail Maintenance Concrete	MILE	0.09	0.5	36	1.62	0.00	M
Boardwalk Decking	LF	1	2	12	24	.01	
Wildlife Viewing Platforms	EACH	2	0.5	345	345	0.17	M
Trail Maintenance Granite	MILE	0	4	12	0	0.00	M
Trimming Wildlife Viewing	EACH	2	3	6	36	0.02	M
Bench Maintenance							
Landscape Maintenance (Contract)	SF	7500					
Irrigation	EACH	1	1	12	12	0.01	
Sign Maintenance	EACH	0	0.25	12	0	0.00	M
Trash Containers	EACH	0	0.05	52	0	0.00	M
Litter Control	ACRE	1	2	300	600	0.29	M
Direct Personnel Hours					1017	0.49	
Indirect Personnel Costs and Hours ¹					203.4	0.10	
Paid Time Off ²					140.85	0.07	
TOTAL					1361.25	0.65	

TABLE 05 | M.O.R.E PLAN - BEACH AREA

BEACH AREA PARKING AND ESPLANADE							
LOCATION TASKS	UNIT	TOTAL UNITS	HOURS/UNIT	FREQ. PER YEAR	TOTAL NUMBERS OF HOURS	NUMBER OF STAFF	PERSONNEL TYPE
Walkways Concrete	SF	1.3	0.75	40	39	0.02	M
Walkways Decorative Decked	SF	0.09	0.5	40			
Trail Maintenance	MILE	0	4	12	0	0.00	M
Play Maintenance	EACH	1	1	325	325	0.16	M
Playscape inspection (High)	EACH	1	1	52	52	0.03	M
Playscape Inspection (Low)	EACH	1	4	12	48	0.02	M
Splash Pad	EACH	1	0.5	150	75	0.04	M
Pavilion (Large)	EACH	1	1.5	244	366	0.18	M
Pavilion (Small)	EACH	4	0.5	244	488	0.23	M
Landscape Maintenance (Contract)	SF	20000					
Irrigation	EACH	1	1	30	30	0.01	
Beach Sand	ACRE	3	2	150	900	0.43	
Parking	SPACES	183	0.16	12	35.136	0.02	M
Restroom Cleaning	STALLS	10	0.17	350	595	0.29	M
Restroom Cleaning (Low)	STALLS	10	0.07	100	70	0.03	M
Trimming Edging (Contract)	1000 LF	10.6					C
Trail Maintenance (Concrete)	MILE	0.09	0.5	36	0.02	0.00	M
Tree Trimming	ACRE	2	8	2		0.00	M
Bench Maintenance	EACH	0	0.5	2	0	0.00	M
Sign Maintenance	EACH	12	0.1	12	14.4	0.01	M
Trash Containers	EACH	0	0.05	52	0	0.00	M
Litter Control	ACRE	5	0.67	350	1172.5	0.56	M
Direct Personnel Hours					4210.053	2.02	
Indirect Personnel Costs and Hours ¹					842.0107	0.40	
Paid Time Off ²					583.09	0.28	
TOTAL					5635.16	2.71	

TABLE 06 | M.O.R.E PLAN - TRAILHEAD

TRAILHEAD AREA							
LOCATION TASKS	UNIT	TOTAL UNITS	HOURS/ UNIT	FREQ. PER YEAR	TOTAL NUMBERS OF HOURS	NUMBER OF STAFF	PERSONNEL TYPE
Trail Maintenance Concrete	MILE	0.09	0.5	36	1.62	0.00	M
Trail Maintenance Granite	MILE	0	4	12	0	0.00	M
Landscape Maintenance (Contract)	SF	300					
Irrigation	EACH						
Parking	SPACES	40	0.16	12	7.68	0.02	M
Restroom Cleaning	STALLS	2	0.17	350	129.2	0.29	M
Direct Personnel Hours					25.84	2.02	
Indirect Personnel Costs and Hours ¹					25.84	0.40	
Paid Time Off ²					17.89	0.28	
TOTAL					5635.16	2.71	

Executive Summary

Based upon the master plan analysis and current budget presented within this document, it is the recommendation of the consultant team to proceed with phase one development as described below.

It is highly recommended that the priority for the first phase of park development be the addition of a small trailhead along Silent Harbor Loop. A second trailhead will provide access for users to the park trail, without having to compete with traffic at the beach location. This item should be fully completed per the master plan design.

Second, the consultant team recommends an expansion of the existing beach facilities. While the budget will not accommodate the construction of all proposed items, priorities should be given to adding a second restroom, incorporating more shade structures, adding a splash pad, and expanding the existing parking lot.

Finally, it is the recommendation of the consultant team that when funds are available, the parking facility and subsurface infrastructure for the Biehle property be installed as a first phase. By including these improvements within the first phase of construction, it will allow for the city to be better prepared for the future improvements and provide another trailhead for the western portion of the lake.

Both the Silent Harbour Loop trailhead and improvements to the Biehle House Property are important to providing additional lake access on the western portion of the park.

MAP 06 | LAKE PFLUGERVILLE - BIEHLE HOUSE PROPERTY



BIEHLE HOUSE PROPERTY

When city officials formalized the original land purchase of the lake property, the Biehle House property located immediately adjacent to the west side of Becker Farm road was included in the purchase. During the development of this report, the city asked the consultant team to develop a master plan for the Biehle property shown here.

The Biehle House property provides a wide array of opportunities for both passive and active recreation and programming. Working closely with parks and recreation staff, the consultant team has developed a plan for the property which seeks to not only connect this site to the lake park but provide additional program items not accounted for in the lake park master plan.

The design of the property includes a large community garden on the western edge complete with a greenhouse and solar panels. On the eastern portion of the site is a new facility which houses rentable spaces for events and offices for park staff. Nestled between the two uses is a lawn area for farmer's market type events and small festivals. A large parking facility provides access for all users to utilize the new park opportunities and to access the trail network.

While the Biehle House property was not part of the original master planning process, it is the consultant's recommendation that the city try to construct utility needs and a small parking lot during the first phase. These small improvements will provide yet another trail head and better situate the property for future development park amenities.

TABLE 07 | BIEHLE HOUSE PROPERTY - OPINION OF PROBABLE COST

Biehle House Property	
Proposed Buildings	\$2,510,000
Hardscape Site Structures	\$1,010,000
Landscape Elements	\$275,000
Parking Lot (est. 115 spaces) Infrastructure Improvements	\$710,000
Miscellaneous Improvements	\$675,750
TOTAL	\$5,180,750

** Costs shown are in 2019 dollars and are not an order of magnitude, pre-design level. Construction contingency and soft costs are not shown here. Refer to full cost estimate at end of document for all additional design and contingency costs. All costs are prior to specific site assessments and any design will require more detailed evaluations to determine specific costs for each specific segment.*



View of playground and new building from event lawn.

FIGURE 03 | LAKE PFLUGERVILLE - EVENT LAWN AREA



BIEHLE HOUSE PROPERTY - PH. 1

Due to current demand within the city to add more community garden space, it is recommended that a phase 1 option be considered at the Biehle property to construct the garden plots. Highlighted on the graphic shown here, the phase 1 improvements would add garden plots, small parking facility, semi-permanent restrooms, and a pedestrian connection across Becker Farm Rd. to the lake. It is also recommended in this

phase 1 construction to demo the existing structures on the property and install all utility infrastructure needs for future phases of development.

In total, this phase 1 suggestion will provide additional community garden plots which are in need as well as provide another western trail head for Pflugerville Lake Park.

TABLE 08 | BIEHLE HOUSE PROPERTY PH. 1 - OPINION OF PROBABLE COST

Biehle House Property	
Remove Existing Buildings	\$50,000
Hardscape Site Structures	\$477,000
Landscape Elements	\$162,500
Parking Lot (est. 80 spaces) Infrastructure Improvements	\$625,000
Miscellaneous Improvements	\$65,7250
TOTAL	\$1,380,225

** Costs shown are in 2019 dollars and are not an order of magnitude, pre-design level. Construction contingency and soft costs are not shown here. Refer to full cost estimate at end of document for all additional design and contingency costs. All costs are prior to specific site assessments and any design will require more detailed evaluations to determine specific costs for each specific segment.*

FIGURE 04 | LAKE PFLUGERVILLE - COMMUNITY GARDEN AREA



View within the community gardens.

Appendices

DETAILED COST ESTIMATE | MASTER PLAN



Lake Plflugerville - CONCEPT COST ESTIMATES					JUNE 2019
Item Number	Description	Units	Unit Price	Quantity	Total Price
BEACH AREA (parking lot and esplanade)					
SECTION 100 - HARDSCAPE AND SITE STRUCTURES					
A-1.01	Standard Concrete Walkways	SF	\$6.50	51,080	\$ 332,020.00
A-1.02	Decorative Paving Walkways	SF	\$10.00	4,550	\$ 45,500.00
A-1.03	Decked Walkways	SF	\$22.00	6,800	\$ 149,600.00
A-1.04	Decomposed Granite Trails (trail behind esplanade and connection to neighborhood)	SF	\$4.00	14,700	\$ 58,800.00
A-1.05	Playground Equipment (2-5 yr. and 6+ age equipment)	LS	\$100,000.00	2	\$ 200,000.00
A-1.06	Playground Surfacing (wood fiber)	SF	\$4.00	13,110	\$ 52,440.00
A-1.07	Splash Pad Equipment allowance	LS	\$350,000.00	1	\$ 350,000.00
A-1.08	Splash Pad Surfacing (concrete pad with not slip coating)	SF	\$10.00	5,700	\$ 57,000.00
A-1.09	Shade Pavilions (single picnic)	EA	\$75,000.00	4	\$ 300,000.00
A-1.10	Shade Pavilions (large group pavilion)	EA	\$200,000.00	1	\$ 200,000.00
A-1.11	Park Entry Sign	EA	\$10,000.00	1	\$ 10,000.00
Sub-Total Hardscape Elements					\$ 1,755,360.00
Landscape Elements (plaza only)					
A-2.01	Proposed Landscape allowance (10% esplanade area)	LS	\$175,536.00	1	\$ 175,536.00
A-2.02	Irrigation (sub-surface and drip) allowance (5% of esplanade area)	LS	\$152,500.00	1	\$ 152,500.00
A-2.03	Beach sand (replenish existing and new area)	SF	\$4.00	110,550	\$ 442,200.00
Sub-Total Landscape Elements					\$ 770,236.00
Infrastructure					
A-3.01	Parking lot (102 spots added [190], resurface existing and added parking lot, striping, C&G	LS	\$690,000.00	1	\$ 690,000.00
A-3.02	Utilities (water and ww lines for water fountains, splash pad, new restroom)	LS	\$35,000.00	1	\$ 35,000.00
A-3.03	Parking lot landscaping (trees and vegetation in parking area, 10% of parking total)	LS	\$72,500.00	1	\$ 72,500.00
Sub-Total Site Infrastructure					\$ 797,500.00
Restroom Facilities					
A-4.01	Refurbish Existing Restroom Building (new fixtures, furnishings, lighting, paint) Allowance	LS	\$50,000.00	1	\$ 50,000.00
A-4.02	New Restroom Facility (open-air, custom design, 4 mens, 4 womens) Allowance	LS	\$400,000.00	1	\$ 400,000.00
Sub-Total Signage & Infrastructure					\$ 450,000.00
Furnishings					
A-5.01	Site Furnishings Allowance (5% of esplanade area)	LS	\$87,800.00	1	\$ 87,800.00
Sub-Total Site Furnishings					\$ 87,800.00
Lighting and Electrical					
A-6.01	Lighting, Fixtures, and Wiring Allowance (10% of esplanade costs)	LS	\$175,500.00	1	\$ 175,500.00
Sub-Total Site Lighting & Electrical					\$ 175,500.00
Misc. improvements and contingencies					
A-7.01	General conditions, Mobilization, Site prep. (5% of project cost)	LS	\$201,820.00	1	\$ 201,820.00
Sub-Total Beach Area Construction					\$ 4,238,216.00
TRAILHEAD (western parking lot and trail to esplanade)					
Hardscape and Site Structures					
B-1.01	Standard Concrete Walkways	SF	\$6.50	7,100	\$ 46,150.00
B-1.03	Decomposed Granite Trails	SF	\$4.00	3,400	\$ 13,600.00
B-1.04	Park Entry Sign	EA	\$10,000.00	1	\$ 10,000.00
Sub-Total Hardscape Elements					\$ 69,750.00
Landscape Elements (plaza only)					
B-2.01	Proposed Landscape allowance (parking lot landscaping, 5% of improvements)	LS	\$18,000.00	1	\$ 18,000.00
B-2.02	Irrigation (sub-surface and drip) allowance (5% of parking improvements costs)	LS	\$18,000.00	1	\$ 18,000.00
Sub-Total Landscape Elements					\$ 36,000.00
Infrastructure					
Curb and Gutter			\$20,736.00		
B-3.02	Utilities (water and ww lines for water fountains, new restroom)	LS	\$75,000.00	1	\$ 75,000.00
Sub-Total Site Infrastructure					\$ 350,000.00
Restroom Facilities					
B-4.01	Restroom Structure (open-air, custom design, 1 men and 1 women) Allowance	LS	\$200,000.00	1	\$ 200,000.00
Sub-Total Signage & Infrastructure					\$ 200,000.00
Furnishings					
B-5.01	Site Furnishings Allowance (2% of parking, building, and trail area)	LS	\$12,400.00	1	\$ 12,400.00
Sub-Total Site Furnishings					\$ 12,400.00
Lighting and Electrical					
B-6.01	Lighting, Fixtures, and Wiring allowance (10% of parking costs)	LS	\$35,000.00	1	\$ 35,000.00
Sub-Total Site Lighting & Electrical					\$ 35,000.00
Misc. improvements and contingencies					
B-7.01	General conditions, Mobilization, Site prep. (5% of project cost)	LS	\$35,200.00	1	\$ 35,200.00
Sub-Total Estimated Trailhead Area Cost					\$ 738,350.00
BOARDWALK TRAIL AREA					
Hardscape and Site Structures					
C-1.01	Standard Concrete Walkways	SF	\$6.00	160	\$ 960.00
C-1.02	Boardwalk Decking	LF	\$1,115.00	1,755	\$ 1,956,825.00
C-1.03	Shade Structures (covered wildlife viewing platforms)	EA	\$60,000.00	2	\$ 120,000.00
C-1.04	Decomposed Granite Trails	SF	\$4.00	4,180	\$ 16,720.00
Sub-Total Hardscape Elements					\$ 2,094,505.00
Landscape Elements (plaza only)					
C-2.01	Proposed Landscape allowance	LS	\$50,000.00	1	\$ 50,000.00
Sub-Total Landscape Elements					\$ 50,000.00
Sub-Total Estimated Boardwalk Area Cost					\$ 2,144,505.00
LAKE PFLUGERVILLE TRAIL IMPROVEMENTS					
Hardscape and Site Structures					
D-1.01	Existing Decomposed Granite Trail Resurfacing (Replacing surface material only)	SF	\$3.00	140,750	\$ 422,250.00
D-1.02	Concrete Pour to Replace Existing Decomposed Granite Trail Bridge Section	SF	\$7.00	12,700	\$ 88,900.00
Sub-Total Estimated Boardwalk Area Cost					\$ 511,150.00
Construction Contingency (10% of total improvements)					\$ 763,200.00
Soft Cost Estimate (CD's, bidding, CA, geotech, design survey) (12% of total improvements)					\$ 915,900.00
Total Estimated Development Cost					\$9,311,321.00

DETAILED COST ESTIMATE | BIEHLE HOUSE



Biehle Property Full Buildout - OPCC					June 2019
Item Number	Description	Units	Unit Price	Quantity	Total Price
Proposed Buildings					
1.01	New park admin building and community room (allowance)	LS	\$2,000,000.00	1	\$ 2,000,000.00
1.02	Stand alone park restroom building (allowance)	LS	\$310,000.00	1	\$ 310,000.00
1.03	Maintenance building and Cistern (allowance)	LS	\$100,000.00	1	\$ 100,000.00
1.04	Greenhouse (allowance)	LS	\$100,000.00	1	\$ 100,000.00
Sub-Total Site Furnishings					\$ 2,510,000.00
Hardscape and Site Structures					
2.01	Sidewalk Decking (30,000sf)	LS	\$250,000.00	1	\$ 250,000.00
2.02	Regional Trail (12,000sf)	LS	\$120,000.00	1	\$ 120,000.00
2.03	Community Gardens (praised planting beds, fencing, gravel base, 13500sf)	LS	\$300,000.00	1	\$ 300,000.00
2.04	Playground (equipment and surfacing)	LS	\$250,000.00	1	\$ 250,000.00
2.05	Shade structure/picnic pavilion (custom design pavilions)	LS	\$80,000.00	1	\$ 80,000.00
2.08	Park Entry Sign	EA	\$10,000.00	1	\$ 10,000.00
Sub-Total Hardscape Elements					\$ 1,010,000.00
Landscape Elements (plaza only)					
3.01	Proposed trees (4" min.) allowance	LS	\$35,000.00	1	\$ 35,000.00
3.02	bio-swales (heavily landscaped) allowance	LS	\$150,000.00	1	\$ 150,000.00
3.03	lawn panel (sod) allowance	LS	\$10,000.00	1	\$ 10,000.00
3.04	Irrigation (sub-surface and drip) allowance	LS	\$80,000.00	1	\$ 80,000.00
Sub-Total Landscape Elements					\$ 275,000.00
Parking lot and Infrastructure improvements					
4.01	Parking lot and utilities (5,825 SY of parking, 115 spots added)	LS	\$710,000.00	1	\$ 710,000.00
Sub-Total Site Furnishings					\$ 710,000.00
Misc. improvements and contingencies					
5.01	Site furnishings lighting (10% of project cost)	LS	\$ 450,500.00	1	\$ 450,500.00
5.02	General site grading and earthwork (5% of project cost)	LS	\$ 225,250.00	1	\$ 225,250.00
Sub-Total Site Furnishings					\$ 675,750.00
Sub-Total Estimated Construction Cost					\$ 5,180,750.00
Construction Contingency (10%)					\$ 518,075.00
Soft Cost Contingency (12%)					\$ 683,859.00
Total Estimated Construction Cost					\$6,382,684.00

Assumptions/Disclaimers

1) All Opinion of Probable Construction Costs (OPCC) represent the Consultant and their Sub-Consultant(s) best judgment as professionals familiar with the construction industry and current available unit pricing. Consultant/Sub-Consultant(s) do not guarantee that proposals, bids or actual Project Construction Costs will not vary from this opinion. Quantities are estimates only and the actual amount of work and/or materials are contingent upon final existing conditions, survey, and construction design of these improvements.

2) Unit pricing is based on average cost statewide and does not account for any site specific determinates that would effect costs of construction (i.e., unknown subsurface conditions, structural foundations/footing per local soil conditions, etc.).

3) Regulatory Review, Permitting and Fees are not included in this OPCC.

4) Horizontal utility adjustments/relocations/extensions/services for storm sewer, domestic water, sanitary sewer, gas, electric and communication utility lines to the site are not included in this OPCC.

5) Projection of future construction costs should include a 10% annual increase at a minimum.

Appendices (continued)

DETAILED COST ESTIMATE | MASTER PLAN



Lake Pflugerville Phase 1 - OPCC					JUNE 2019	
Item Number	Description	Units	Unit Price	Quantity	Total Price	
BEACH AREA (parking lot and esplanade)						
SECTION 100 - HARDSCAPE AND SITE STRUCTURES						
A-1.01	Standard Concrete Walkways	SF	\$6.50	51,080	\$ 332,020.00	
A-1.02	Decorative Paving Walkways	SF	\$10.00	4,550	\$ 45,500.00	
A-1.03	Decked Walkways	SF	\$22.00	6,800	\$ 149,600.00	
A-1.04	Decomposed Granite Trails (trail behind esplanade and connection to neighborhood)	SF	\$4.00	14,700	\$ 58,800.00	
A-1.07	Splash Pad Equipment allowance	LS	\$350,000.00	1	\$ 350,000.00	
A-1.08	Splash Pad Surfacing (concrete pad with not slip coating)	SF	\$10.00	5,700	\$ 57,000.00	
A-1.09	Shade Pavilions (single picnic)	EA	\$75,000.00	4	\$ 300,000.00	
A-1.10	Shade Pavilions (large group pavilion)	EA	\$200,000.00	1	\$ 200,000.00	
A-1.11	Park Entry Sign	EA	\$10,000.00	1	\$ 10,000.00	
Sub-Total Hardscape Elements					\$ 1,502,920.00	
Landscape Elements (plaza only)						
A-2.01	Proposed Landscape allowance (10% esplanade area)	LS	\$150,292.00	1	\$ 150,292.00	
A-2.02	Irrigation (sub-surface and drip) allowance (5% of esplanade area)	LS	\$152,500.00	1	\$ 152,500.00	
Sub-Total Landscape Elements					\$ 302,792.00	
Infrastructure						
A-3.01	Parking lot (102 spots added [190], resurface existing and added parking lot, striping, C&I	LS	\$690,000.00	1	\$ 690,000.00	
A-3.02	Utilities (water and ww lines for water fountains, splash pad, new restroom)	LS	\$35,000.00	1	\$ 35,000.00	
A-3.03	Parking lot landscaping (trees and vegetation in parking area, 10% of parking total)	LS	\$72,500.00	1	\$ 72,500.00	
Sub-Total Site Infrastructure					\$ 797,500.00	
Restroom Facilities						
A-4.01	Refurbish Existing Restroom Building (new fixtures, furnishings, lighting, paint) Allowance	LS	\$50,000.00	1	\$ 50,000.00	
A-4.02	New Restroom Facility (open-air, custom design, 4 mens, 4 womens) Allowance	LS	\$400,000.00	1	\$ 400,000.00	
Sub-Total Signage & Infrastructure					\$ 450,000.00	
Furnishings						
A-5.01	Site Furnishings Allowance (5% of esplanade area)	LS	\$75,100.00	1	\$ 75,100.00	
Sub-Total Site Furnishings					\$ 75,100.00	
Lighting and Electrical						
A-6.01	Lighting, Fixtures, and Wiring Allowance (10% of esplanade costs)	LS	\$150,300.00	1	\$ 150,300.00	
Sub-Total Site Lighting & Electrical					\$ 150,300.00	
Misc. improvements and contingencies						
A-7.01	General conditions, Mobilization, Site prep. (5% of project cost)	LS	\$163,930.00	1	\$ 163,930.00	
\$		3,293,500.00				
Sub-Total Beach Area Construction					\$ 3,442,542.00	
TRAILHEAD (western parking lot and trail to esplanade)						
Hardscape and Site Structures						
B-1.01	Standard Concrete Walkways	SF	\$6.50	7,100	\$ 46,150.00	
B-1.03	Decomposed Granite Trails	SF	\$4.00	3,400	\$ 13,600.00	
B-1.04	Park Entry Sign	EA	\$10,000.00	1	\$ 10,000.00	
Sub-Total Hardscape Elements					\$ 69,750.00	
Landscape Elements (plaza only)						
B-2.01	Proposed Landscape allowance (parking lot landscaping, 5% of improvements)	LS	\$18,000.00	1	\$ 18,000.00	
B-2.02	Irrigation (sub-surface and drip) allowance (5% of parking improvements costs)	LS	\$18,000.00	1	\$ 18,000.00	
Sub-Total Landscape Elements					\$ 36,000.00	
Infrastructure						
B-3.01	Parking lot (39 spots added, resurface existing lot and added parking lot, striping, C&G)	LS	\$275,000.00	1	\$ 275,000.00	
B-3.02	Utilities (water and ww lines for water fountains, new restroom)	LS	\$75,000.00	1	\$ 75,000.00	
Sub-Total Site Infrastructure					\$ 350,000.00	
Restroom Facilities						
B-4.01	Restroom Structure (open-air, custom design, 1 men and 1 women) Allowance	LS	\$200,000.00	1	\$ 200,000.00	
Sub-Total Signage & Infrastructure					\$ 200,000.00	
Furnishings						
B-5.01	Site Furnishings Allowance (2% of parking, building, and trail area)	LS	\$12,400.00	1	\$ 12,400.00	
Sub-Total Site Furnishings					\$ 12,400.00	
Lighting and Electrical						
B-6.01	Lighting, Fixtures, and Wiring allowance (10% of parking costs)	LS	\$35,000.00	1	\$ 35,000.00	
Sub-Total Site Lighting & Electrical					\$ 35,000.00	
Misc. improvements and contingencies						
B-7.01	General conditions, Mobilization, Site prep. (5% of project cost)	LS	\$35,200.00	1	\$ 35,200.00	
\$		738,350.00				
Sub-Total Estimated Trailhead Area Cost					\$ 738,350.00	
Construction Contingency (10% of total improvements)					\$ 418,100.00	
Soft Cost Estimate (CD's, bidding, CA, geotech, design survey) (12% of total improvements)					\$ 501,700.00	
Total Estimated Development Cost					\$5,100,692.00	

Assumptions/Disclaimers

- 1) All Opinion of Probable Construction Costs (OPCC) represent the Consultant and their Sub-Consultant(s) best judgment as professionals familiar with the construction
- 2) Unit pricing is based on average cost statewide and does not account for any site specific determinates that would effect costs of construction (i.e., unknown subsurface
- 3) Regulatory Review, Permitting and Fees are not included in this OPCC.
- 4) Horizontal utility adjustments/relocations/extensions/services for storm sewer, domestic water, sanitary sewer, gas, electric and communication utility lines to the site are not included in this OPCC.
- 5) Projection of future construction costs should include a 10% annual increase at a minimum.

DETAILED COST ESTIMATE | BIEHLE HOUSE



Biehle Property Phase 1 - OPCC						June 2019
Item Number		Description	Units	Unit Price	Quantity	Total Price
Demo Existing Building						
1.01	Remove existing buildings and garage slab (testing and abatement for asbestos and lead) allowance		LS	\$50,000.00	1 \$	50,000.00
Sub-Total Building Demo						\$ 50,000.00
Hardscape and Site Structures						
2.01	Semi - Permanent Restroom (simple metal enclosure to contain port-a-cans)		LS	\$10,000.00	1 \$	10,000.00
2.02	Regional Trail connection (9,500sf)		LS	\$66,500.00	1 \$	66,500.00
2.03	Community Gardens (55 total plots with gravel walking surface)		LS	\$300,000.00	1 \$	300,000.00
2.04	Simple Shade Structure(prefab hip roof structure)		LS	\$30,000.00	1 \$	30,000.00
2.05	Price increase for Artistic Shade Structure (allowance)		LS	\$50,000.00	1 \$	50,000.00
2.06	Benches (Allowance)		EA	\$2,000.00	3 \$	6,000.00
2.07	Drinking fountain with bottle filler		EA	\$4,500.00	1 \$	4,500.00
2.08	Park Entry Sign		EA	\$10,000.00	1 \$	10,000.00
Sub-Total Hardscape Elements						\$ 477,000.00
Landscape Elements (plaza only)						
3.01	Proposed trees (3" min.)		EA	\$500.00	20 \$	10,000.00
3.02	bio-swales (heavily landscaped) allowance		LS	\$100,000.00	1 \$	100,000.00
3.03	Irrigation (sub-surface and drip)		SF	\$1.50	35000 \$	52,500.00
Sub-Total Landscape Elements						\$ 162,500.00
Parking lot and Infrastructure improvements						
4.01	Parking lot and utilities (4,700 SY Parking, 83 spots added)		LS	\$625,000.00	1 \$	625,000.00
Sub-Total Parking and Infrastructure						\$ 625,000.00
Misc. improvements and contingencies						
5.01	General site grading and earthwork (5% of project cost)		LS	\$ 65,725.00	1 \$	65,725.00
Sub-Total Misc.						\$ 65,725.00
Sub-Total Estimated Construction Cost						\$ 1,380,225.00
Construction Contingency (10%)						\$ 138,022.50
Soft Cost Contingency (12%)						\$ 182,189.70
Total Estimated Construction Cost						\$1,700,437.20

Assumptions/Disclaimers

1) All Opinion of Probable Construction Costs (OPCC) represent the Consultant and their Sub-Consultant(s) best judgment as professionals familiar with the construction industry and current available unit pricing. Consultant/Sub-Consultant(s) do not guarantee that proposals, bids or actual Project Construction Costs will not vary from this opinion. Quantities are estimates only and the actual amount of work and/or materials are contingent upon final existing conditions, survey, and construction design of these improvements.

2) Unit pricing is based on average cost statewide and does not account for any site specific determinates that would effect costs of construction (i.e., unknown subsurface conditions, structural foundations/footing per local soil conditions, etc.).

3) Regulatory Review, Permitting and Fees are not included in this OPCC.

4) Horizontal utility adjustments/relocations/extensions/services for storm sewer, domestic water, sanitary sewer, gas, electric and communication utility lines to the site are not included in this OPCC.

5) Projection of future construction costs should include a 10% annual increase at a minimum.