Special Considerations

"Two Underwater", Will van Overbeek

This chapter is intended to discuss matters that have global significance for the plan. In setting them apart in this way, the hope was to help the reader understand each issue and its role in shaping recommendations throughout the park.

Also included is a proposal to enlarge the Pool, an idea the team was asked to evaluate after the master plan project was underway. Enlarging the Pool did not seem to fit into the fabric of the original master plan proposals, therefore, the planning team did not recommend it. The planning team's thoughts on enlarging the Pool are discussed in this chapter.

Interpretive Plan

Currently, only fragments of the Barton Springs story are offered to visitors. The Splash! exhibit, of course, does a fine job of educating the public about the aquifer, the watershed and the contributing zone. But otherwise, the story is only offered in the occasional historical plaque and a few strategically placed information panels.

A better, more comprehensive telling of Barton Springs' rich cultural and environmental stories would surely enrich the enjoyment of visitors. At the same time, it could play a significant stewardship role by helping to sensitize people to the fragility of this precious (and threatened) ecosystem. An interpretive plan would do just that. As the name implies, an interpretive plan is the art of assembling the important storylines of a place and presenting them in ways that are accessible, enjoyable and informative for the public.

An interpretive planning firm should be commissioned to "tell the story of Barton Springs". The planners should coordinate their efforts with Parks Department staff; especially the Nature Center exhibit staff, whose knowledge of the park, its history and available historical/scientific resources will prove invaluable. This plan should endeavor to include stories throughout the geography of the park, and it should be open to a breadth of topics. The process should consider a full range of presentation strategies ranging from static information panels to interactive exhibits to hand-held electronic devices.

It should plan for the long-term goal of raising the profile of the Beverly S. Sheffield Center by creating a Visitor's Center and a Gallery in the existing Bathhouse, recognizing that these can help to expand on the topics that are so thoughtfully introduced in the Splash! Exhibit.

This plan should result in both short-term and long term strategies, and it should include a wayfinding component to help visitors locate the significant elements in the park and how they are arranged.

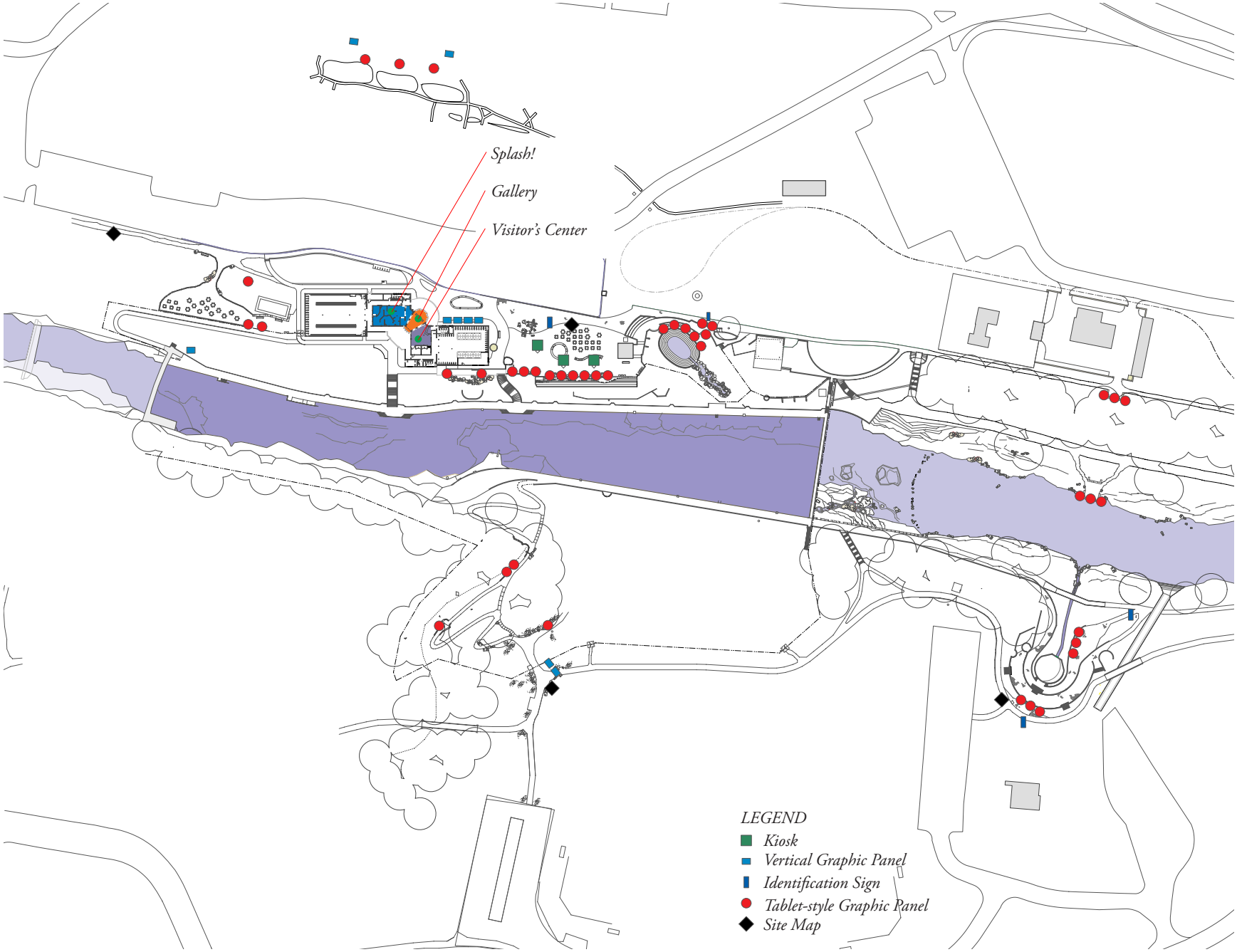
Short-term strategies should be implemented immediately. While it is important that the shape of this implementation emerge from the planning process itself, it is perhaps worth noting that suggestions such as adding kiosks to the Tree Court or installing interactive features with real-time data streams in the rotunda of the Bathhouse have been offered, and should be considered. The Splash! exhibit is now over 10 years old, and its computer equipment is in need of updating. A consultant should be hired to make equipment update recommendations as part of the short term recommendations.

Vertical displays are sometimes appropriate for their ability to explain complex topics attractively and inexpensively, and without adding a high maintenance burden (above). Interactive displays can be exciting ways to display information dynamically (below).
Photos: FD2S (above), Clark Hancock (below).

The Beverly S. Sheffield Education Center was installed in the early 1990s, and is dedicated to public education on matters related to the aquifer. It includes the Splash! exhibit, a Gallery and two classrooms. It was paid for with mostly private funds, and stands as a reminder of the longstanding tradition of advocacy that can be found today in groups like the Save Barton Creek Association and the Save Our Springs Alliance.

This plan recommends raising the profile of the Sheffield Center by upgrading the Gallery and creating a Visitor's Center. It also recommends extending its reach, so that its mission can be felt throughout the park.

The graphic to the right is intended to identify potential interpretation opportunities, and in so doing, to convey such a plan's rich potential. It does not intend to supplant the work of the yet-to-begin interpretive planning process, where global strategies as well as strategies for each site will be thoughtfully considered. This master plan recognizes that a successful result may or may not include the specific elements portrayed here.


Splash!
Gallery
Visitor's Center
LEGEND
Kiosk
Vertical Graphic Panel
Identification Sign
Tablet-style Graphic Panel
Site Map

Sustainability

The City of Austin has long been a leader in sustainability matters. Its Green Building program has long been a national leader, and the City's commitment to alternative energy is well known and respected nationally. The City recently codified its interest in sustainability with its embrace of LEED (Leadership in Energy Efficient Design), a program administered by the U.S. Green Building Council. The City generally requires all new buildings to be built to LEED Silver standards. LEED is designed as a scoring system, where gold is higher than silver and platinum is higher than gold.

LEED is organized into six categories of concern:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Air Quality
- Innovation and Design Process

The work resulting from this plan will take place over a period of many years, and is spread across numerous efforts, so tracking it through LEED would likely prove cumbersome if not impractical. Plus, much of this work is site work and repair work, so would likely be exempt from the City's LEED requirements. Even still, the planning team recognizes that sustainability is an important value for the City, so it analyzed its recommendations with LEED in mind, and found that opportunities for sustainable design and construction can be found in all categories, and with appropriate stewardship, sustainability goals can be achieved.

This team recommends that LEED be formally included as part of the process wherever possible. Even if LEED certification is not formally sought for all of the parts of this master plan, this team recommends that the LEED organizational framework be used to organize and track sustainability performance. It is the experience of this team that LEED can be useful in bringing focus to issues, and it can keep that focus present throughout the design and construction process.

Many of this plan's recommendations have a sustainability underpinning. Some of them

This is a free-standing solar collector at Westcave Preserve. To meaningfully impact energy usage at Barton Springs would require many times more collector area, potentially degrading the park ambiance. But a single collector like this might be enough to power the path lights at the Zilker Ponds.

were identified as LEED matters, and some of them were the result of public input expressing interest in green building.

Water Use

At a place whose very reason to exist is water, it is perhaps ironic to note that the team found that water use and water conservation issues are areas where much progress can be made. Three, in particular, stand out:

- The showers alone can account for over 40,000 gallons a day at peak demand. This water should be reused for toilet flushing and irrigation.
- Rainwater should be harvested from the roofs and all paved surfaces in the Bathhouse dressing areas, and should be used for irrigation.
- Fire hoses are currently used for high-pressure pool cleaning functions, using City of Austin drinking water for the task. When conditions are right (when the water is not too turbid), pool water should be used instead.
- City of Austin drinking water is currently used for irrigation. Other sources should be explored including rainwater harvesting, shower water harvesting; possibly even Lady Bird Lake water harvesting. Furthermore, more attention should be paid to landscape water demands through careful plant selection and a new, more sophisticated irrigation system.

Solar Energy

Solar energy is always a tantalizing prospect, and it should be considered in any sustainability effort in Central Texas. To be suitable, a site must have locations for the collectors that are free of shading objects and that face south and southwest. Also, because the collectors can be quite large, their appearance must be considered.

For this plan, the obvious location for collectors would be the existing Bathhouse, and all of its roofs, even those on the concrete shade structures were initially considered. In the end, concern that the collectors could be visually intrusive led to a more subdued plan to use only the highest roof for collectors, because they would be inconspicuous there. Austin Energy performed a "sky window" analysis and determined that the highest roof was suitable for solar hot water, but due to tree shade, was less suitable for solar electricity generation. Felicitously, the AE recommendation dovetailed with the team's internal analysis, indicating that the solar resource would be used more efficiently if it were used locally, that is, on-site, and directly, that is, using collected energy for hot water, rather than converting it to electricity.

Free-standing solar panels for general electrical generation were also considered but were rejected for general use out of fear of degrading the park ambience, because it would require a conspicuous display of numerous collectors.

Even though solar generation seems infeasible for general energy production, it can and should be considered for special circumstances, with two instances bearing mention:

Austin Energy is currently working to develop a solar-powered electric scooter/electric bike recharge station. As envisioned, it would collect and store enough energy for a stream of users throughout the course of a sunny day. It would be attractively designed and it would be small and portable enough so that it could be moved by truck (to a sunnier spot, for example). The money for this project is coming from SXSW, whose goal is to make their 2008 conference carbon neutral. The plan is to make as many as 20 of these stations, and Austin Energy has agreed to locate one of them at Barton Springs.

The path lighting requirements for the Zilker Ponds may (possibly) be another opportunity for solar power. Feasibility will depend on the extent of the lighting scheme and its specific design parameters. Further, it will depend on when this is undertaken. A scheme that is infeasible today may--with technological advancements--well be feasible in the future. In the meantime, it is encouraging to note that there is--even today--a modest solar-powered path lighting project on the hike and bike trail in Zilker Park.

Finally, long-time observers of the solar energy scene frequently tout technical advancements "just around the corner". While this has been a common refrain for decades, even when the results were underwhelming, the technology currently being developed does show special promise in terms of both collecting efficiency and cost. With this in mind, the recommendations of this plan should be revisited from time to time as better hardware emerges.

Hydroelectric Energy

Perhaps the most tantalizing prospect for energy generation at Barton Springs is hydroelectric power. Clearly, the water source is there, as is a precedent for water power in the construction and operation of mills at Barton Springs during the 19th century. But the planners were not successful in identifying equipment that seemed suitable for this scale of undertaking. Nonetheless, the thought is presented here to suggest that this idea should be revisited from time to time in hopes that future generations of hydroelectric equipment will be suitable.

While this example is larger than would likely be required at Barton Springs, it nonetheless illustrates the point that, when the ambition is to generate enough power to satisfy significant demands, the solar collectors can be large.

Water Quality

In its endeavor to approach sustainability wholistically, LEED acknowledges that water quality matters are important to consider along with the more building-oriented criteria. They are given specific consideration in Sustainable Sites credits 6.1 and 6.2. They are also touched on obliquely throughout the Water Efficiency section. The LEED emphasis on water quality serves to reinforce the concerns of the Texas Commission on Environmental Quality, the City's Watershed Protection and Development Review Department as well as the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Department; all of which have jurisdiction over this site.

The vegetated swale is a water-quality concept for reducing stormwater runoff by collecting it in shallow depressions that allow it to infiltrate the soil, thus recharging groundwater and interrupting the flow of suspended particulates to waterways. In this example, water flows from the right into the upper swale. As the swale fills, its overflow spills into the lower swale. These swales are about 6" deep. Opportunities for vegetated swales can be found in and around the Pool, and throughout Zilker Park. They are inexpensive to construct and easy to maintain. They should be integrated into improvement projects wherever possible.
Photo: Tom Hegemier, P.E., LCRA

LEED-based Chart

To assist in understanding the master plan from a sustainability standpoint, a chart was prepared using LEED as a basis. Following the LEED organizational framework, it indicates whether particular considerations are deemed to be feasible or not. LEED is, of course, based on a scoring system, where points are counted, and a ranking is assigned. LEED Silver, for example, falls between 33 and 38 points. Scoring was deliberately left off of this chart to underscore the point that a specific LEED score cannot be determined at such an early stage of project consideration. And also to discourage the conclusion that a particluar LEED score is even possible, since the LEED protocol is very specific, and is built to address issues that are found in normal building projects, not park master planning projects. Nonetheless, LEED is a useful framework for organizing thoughts and strategies for sustainability, and it is for that reason that the chart was prepared.

This chart is based on the five LEED categories of consideration, with items marked "yes" or "no" to indicate how the master plan addresses particular matters. They are not intended to convey the impression that an actual LEED point is, or could be possible, since the LEED protocol is very particular, and may not apply well to this planning effort. Nonetheless, LEED offers a useful organizational framework, and to the extent that it is a well-known system, it can be seen as a common language.

	DESCRIPTION	**COMMENTS**		**FEASIBILITY**	
				YES	NO
SUSTAINABLE SITES					
SS Prereqisite 1:	Construction Activity Pollution Prevention	Seeding, mulching. earth dikes. silt fencing , sediment traps, sediment basins		X	
SS Credit 1 : Site Selection	Avoid development of inappropriate site	Parkland, and endangered species habitat			X
SS Credit 2 : Development Density	Channel development to urban areas	Renovate previously developed site, community connectivity		X	
SS Credit 3: Brownfield Redevelopment	Develop on a brownfield site			X	
SS Credit 4.1: Alternative Transportation	Public Transportation access	Develop w/in 1/4 mi of public bus stops		X	
SS Credit 4.2: Alternative Transportation	Bicycle Storage & Changing Rooms for 5% users			X	
SS Credit 4.3:Alternative Transportation	5 % Preferred Parking for fuel efficient vehicles			X	
SS Credit 4.4:Alternative Transportation	5 % Preferred Parking for carpools and vanpools				X
SS Credit 5.1: Site Development	Protect or restore habitat, limit site disturbance	Plant 50% with native vegetation/ possible green roof at south bathhouse		X	
SS Credit 5.2: Site Development	Maximize open space, twice bldg footprint	Provide vegetated open space or pedestrian-oriented hardscape equal to bldg. footprint		X	
SS Credit 6.1: Stormwater Design	Quantity Control for stream channel protection	Rainwater collection. Promote infiltration		X	
		Use for irrigation, toilet/urinal flushing		X	
SS Credit 6.2: Stormwater Design	Quality Control: capture & treat 90% of stormwater	Green roof:/pervious pavers/vegetated swales & filters/ rainwater collection			
SS Credit 7.1: Heat Island Effect: Non -Roof	Shade or Hi SRI or open grid for site hardscape	provide shade w/in 5 yrs/reflective paving matls		X	
SS Credit 7.2: Heat Island Effect: Roof	high SRI for roof or green roof	roofing to min level reflectance, open grid pavers		X	
SS Credit 8: Light Pollution Reduction	Reduce exterior lighting and limit spread	orientation of interior & exterior lighting		X	
SUBTOTAL SS:					

	DESCRIPTION	COMMENTS		FEASIBILITY	
				YES	NO
WATER EFFICIENCY					
WE Credit 1.1: Water Efficient Landscaping	Reduce potable water use by 50%	Plant low water-use species, irrigation efficiency, recycled rainwater or grey water, alternative water sources, reclaimed shower water		X	
WE Credit 1.2: Water Efficient Landscaping	No potable water use or no irrigation				X
WE Credit 2: Innovative Wastewater Technologies	Reduce potable water use for sewage by 50%	Water conserving fixtures, recycled rainwater or grey water		X	
WE Credit 3.1: Water Use Reduction	Reduce water use by 20%	Water conserving fixtures, recycled rainwater or grey water/occupant sensors/flush toilets w/ grey water		X	
WE Credit 3.2: Water Use Reduction	Reduce water use by 30%	Water conserving fixtures, recycled rainwater or grey water/occupant sensors/flush toilets w/ grey water		X	
SUBTOTAL WE:					
ENERGY & ATMOSPHERE					
EA Prerequisite 1: Fundamental Commisioning	Verify building's energy systems functioning	Hire commissioning. agent-do commissioning plan, incorporate into construction docs/ verify/do summary report		X	
EA Prerequisite 2: Min Energy Performance Req'd	Establish min level of energy efficiency	High efficiency HVAC, lighting		X	
EA Prerequisite 3: Fundamental Refrigerant Mgmt Req'd	Reduce ozone requirements	zero use CFCs/phase out old equipment		X	
EA Credit 1: Optimize Energy Performance	Achieve increasing levels of energy performance			X	
EA Credit 2: On-Site Renewable Energy	Use on-site renew energy systems to offset energy cost	Solar hot water/ geothermal HVAC/ solar electrical vehicle recharge station		X	
EA Credit 3: Enhanced Commissioning	Begin commissioning early and after project complete			X	
EA Credit 4: Enhance Refrigerant Mgmt	Do not use refrigerants				X
EA Credit 5: Measurement & Verification	Accountability of energy consumption over time.			X	
EA Credit 6: Green Power	35% of electricity from renew sources: 2 yr contract			X	
SUBTOTAL EA:					

	DESCRIPTION	COMMENTS		FEASIBILITY	
				YES	NO
MATERIALS & RESOURCES					
MR Prerequisite 1: Storage & Collect Recyclables	Provide easily accessible area for recycling	Provide recycling areas		X	
MR Credit 1.1: Building Reuse	Maintain 75% of Exist Walls, Floors & Roof			X	
MR Credit 1.2: Building Reuse	Maintain 95% of Exist Walls, Floors & Roof				X
MR Credit 1.3: Building Reuse	Maintain 50% of Interior Non-Structural Elements				X
MR Credit 2.1: Construction Waste Mgmt	Divert 50% from Disposal	Set up plan for const waste/ follow-thru		X	
MR Credit 2.2: Construction Waste Mgmt	Divert 75% from Disposal				X
MR Credit 3.1: Materials Reuse 5%	Use 5% salvaged, refurbished, or reused materials	find uses/sources for salvaged matls			X
MR Credit 3.2: Materials Reuse 10%	Use 10% salvaged, refurbished, or reused materials				X
MR Credit 4.1: Recycled Content 10%	Use 10% recycled content materials			X	
MR Credit 4.2: Recycled Content 20%	Use 20% recycled content materials				X
MR Credit 5.1: Regional Matls	10% Extracted, Processed & Mfr'd Regionally			X	
MR Credit 5.2: Regional Matls	20% Extracted, Processed & Mfr'd Regionally			X	
SUBTOTAL MR:					
INDOOR ENVIRONMENTAL QUALITY					
EQ Prerequisite 1: Min IAQ Performance Req'd	Meet min IAQ reqs of ASHRAE			X	
EQ Prerequisite 2: Tobacco Smoke (ETS) Control Req'd	Prohibit smoking in bldg; designated areas 25' away			X	
EQ Credit 1: Outdoor Air Delivery Monitoring	Install monitoring systems on ventilation			X	
EQ Credit 2: Increased Ventilation	Increase ventiliation min 30% above min rates				X
EQ Credit 3.1: Construction Indoor Air Quality Management Plan: During Construction	Develop and implement constr phase IAQ plan			X	

	DESCRIPTION	COMMENTS		FEASIBILITY	
				YES	NO
EQ Credit 3.2: Constr IAQ Management Plan: Before Occupancy	Develop and implement pre-occupancy phase IAQ plan	IAQ flush out		X	
EQ Credit 4.1: Low-Emitting Materials	Adhesives & sealants to meet volitale organic compounds (VOC) limits	select low VOC products		X	
EQ Credit 4.2: Low-Emitting Materials	Paints and coatings to meet VOC limits	select low VOC products		X	
EQ Credit 4.3: Low-Emitting Materials	Carpet systems to meet VOC limits			NA	
EQ Credit 4.4: Low-Emitting Materials	Composite wood & agrifiber products to meet VOC limits	select plywd, door cores, MDF w/ no urea formaldehydes		X	
EQ Credit 5: Indoor Chemical & Pollutant Source Control	Entryway cleaning, air filtration	special entry, negative pressure utility rms, air filtration		X	
EQ Credit 6. 1: Controllability of Systems: Lighting	Provide individual lite controls for 90% of users	individual controls			X
EQ Credit 6.2: Controllability of Systems: Thermal Comfort	Provide individual comfort controls for 50% of users	individual controls			X
EQ Credit 7.1: Thermal Comfort: Design	Design HVAC & bldg envelope to meet ASHRAE reqts			X	
EQ Credit 7.2: Thermal Comfort: Verification	Implement thermal comfort survey w/in 6-18 mos post-occupancy			X	
EQ Credit 8.1: Daylight & Views	Daylight 75% of spaces	open air facilities		X	
EQ Credit 8.2: Daylight & Views	Views for 90% of spaces	open air facility		X	
SUBTOTAL ER:					
INNOVATION & DESIGN PROCESS					
ID Credit 1-1.4: Innovation in Design	Exceptional performance above min reqts	geothermal, solar hot water, rainwater collection, shower water reuse, solar recharge station		X	
ID Credit 2: LEED AP	Include LEED AP on project team			X	
SUBTOTAL ID:					

Art in the Park

Philosopher's Rock, an example of an art object that helps to define an area.

The Glenna Goodacre sculpture of Roy Bedichek, J. Frank Dobie, and Walter Prescott Webb in the Pecan Grove has become a landmark since it was installed in 1994. Named 'Philosophers' Rock', it speaks of both Austin and Barton Springs as they once were. Functionally, it helps identify the entrance to the Pool, and to give form to the Pecan Grove. Philosophers' Rock is an example of how art can enliven and add meaning to a landscape.

Several general categories of art would be appropriate for the Barton Springs area, developed either by private donors, or through the City of Austin Art in Public Places program as part of rehabilitation projects in the springs area using City Capital Improvement funds. Philosophers' Rock is an example of one kind of art: an art object that helps define the space in which it is placed. The Treaty Oak seating area at the Austin City Hall is another space defining art object. A second type of art for the Barton Springs area is artist-designed

Art Fence at Town Lake Park

'Waterworks', directed and choreographed by Dee McCandless and Gene Menger. These seven events cumulatively involved 300 performers and attracted 14,000 people. The first performance was in 1978; the last was in 1997.
Photos: Scott Von Osdol

'Fruit Cisterns', a proposal by sculptor John Christensen for rain water collection cisterns. An example of an artist-designed craft project (at a large scale).

craft projects, which serve a functional purpose. The Zilker Botanical Garden front and back gates, the gazebos in Zilker and Town Lake Park, part of the Zilker Playscape, as well as some of the benches along the hike and bike trail, are examples of this sort of functional art. Finally, temporary art installations continue to be appropriate in the springs area. In November 2007, a Germaine Keller temporary art piece from her Women and their Work exhibit 'Pattern Pattern Pattern' was on display at the Pool. Dee McCandless' performance art pieces 'Waterworks' are important and exciting parts of the Pool's history.

This plan proposes some specific art works for the Barton Springs area. One, discussed in the section describing the Tree Court, is for an artist designed 'Art Fence' at the overlook in the Pecan Grove to replace the current dingy chainlink fence. Using local vegetation as a motif, this Art Fence would be in the tradition of artist designed, exquisitely crafted iron fences that is developing in Lady Bird Lake area. A second specific art proposal is for the historic sandbox in the sandbox grove to the west of the Bathhouse. The sandbox is no longer used as a sandbox, but is an identified contributing structure in the springs historic designation. Reusing the area as a setting for art, overlooking the Pool and the south bluff, has the potential to help define the Sandbox Grove.

Much of what is interesting in the built environment around Barton Springs are hand-crafted relics from the earlier days of the springs: the Elk mural at Eliza, the entry lamp-posts, the masonry of the Zilker Ponds. These works, with the Bathhouse and the rows of pecan trees, remind us of the intelligence and craft of people who have built around the springs in the past. Appropriately commissioned art pieces can continue and expand that tradition.

Salamander Chalk Drawing, 2007, Germaine Keller. An outdoor site work, part of the Women and Their Work exhibit, "Pattern, Pattern, Pattern". Photo: Germaine Keller

Enlarge the Pool

In the course of preparing this plan, a proposal was made by the Barton Springs Scientific Advisory Committee to enlarge Barton Springs Pool, and the planning team was asked to evaluate that proposal from a master planning point of view.

PROPOSAL

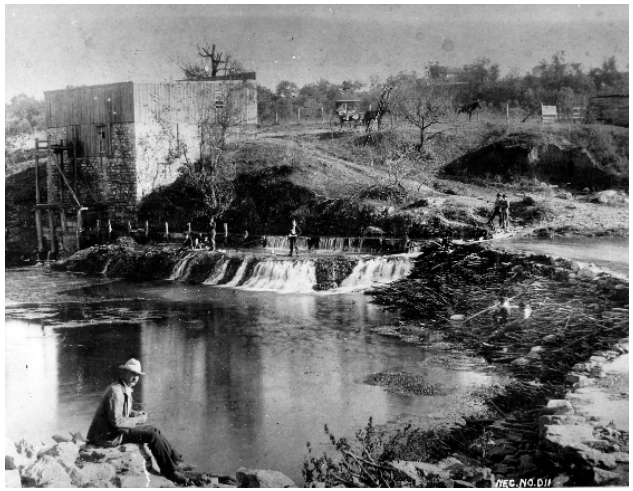
The basic elements are to move the downstream dam further downstream below the outflow of Sunken Garden. This would unite the three major springs into one body of water, a change thought to be positive for the salamander habitat by providing dispersal corridors among the springs and by increasing the ease of interbreeding among salamander populations.

Additionally, because the salamander is more a shallow water species, the proposal involves lowering the water level in the Pool by some two feet. This would have an especially positive impact on the habitat at Main Springs.

EVALUATION

At the outset, it must be noted that complete scientific data to support the proposal to enlarge the Pool has not been prepared. Therefore, the planning team can make no comment on this aspect of the proposal; nor should it, as it lacks the required expertise to do so. However, the planning team evaluated this proposal as one part in the larger context of the master planning effort for Barton Springs, where environmental considerations must be balanced with park user needs and with the need to respect the cultural history of the place. The team met with U.S. Fish and Wildlife Service and the City's Watershed Protection and Development Review Department seeking preliminary regulatory opinion on the proposal. And it met with the Texas Historical Commission to understand their jurisdictional response to this proposal, because its impact on the historic resources at Barton Springs would be profound. The team also met with City of Austin code officials to understand the requirements for new facilities and infrastructure. With all this as background, they made projections regarding the impact such a proposal would have on the life of the park itself.

Against the breadth of this evaluation, it is the conclusion of the planning team that enlarging the Pool should not be recommended. Our evaluation of the likely physical changes to the park raised concerns on multiple levels. Again, this team does not recommend enlarging the Pool as part of this master plan.



The Pool as we know it was built in the late 1920s, but for at least a half century prior, this portion of Barton Creek was the subject of dam building, much of it separating Sunken Garden from the two other springs. C00077A, Austin History Center, Austin Public Library.

FEDERAL PERMITTING CONSIDERATIONS

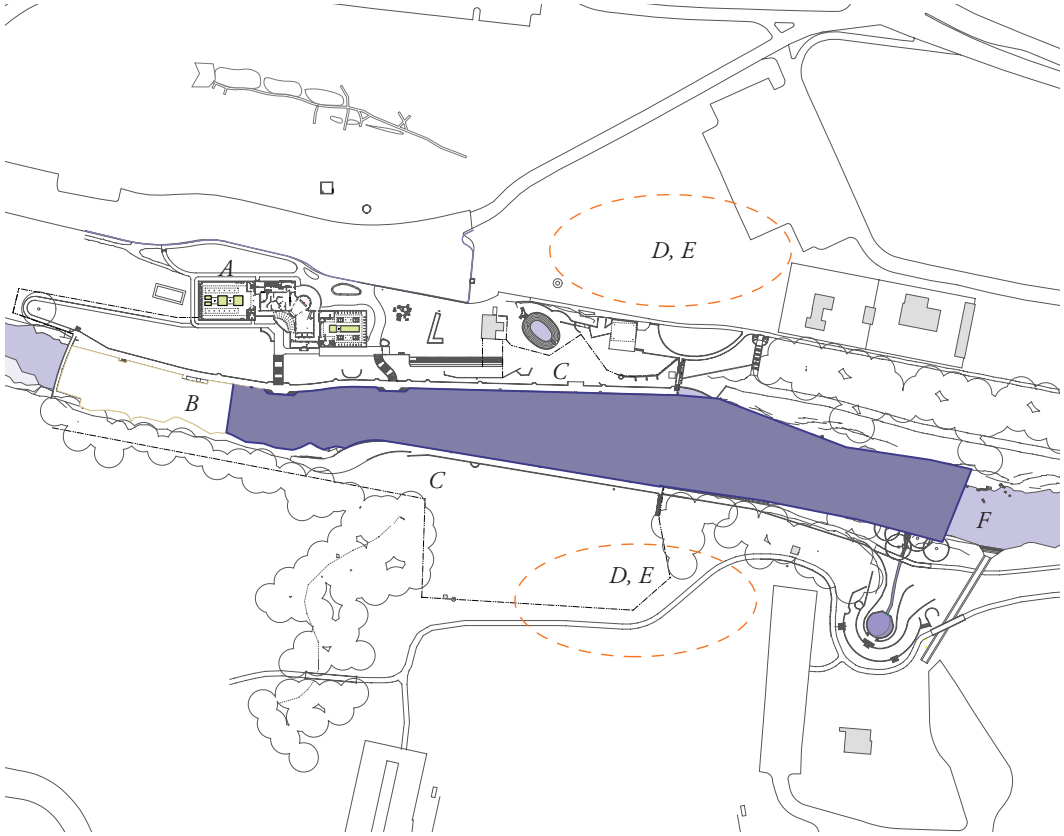
The proposal to enlarge the Pool was discussed with U.S. Fish and Wildlife Service staff in several meetings. From these discussions, we learned that the review and approval process under the 10(a) permit for this proposal would be quite complex. (This is in contrast to many of the other master plan items reviewed with the USFWS. Many things discussed were conceptually acceptable in principle, although a rigorous permitting process would still apply.) There would be a number of scientific questions considered. These would likely include whether uniting the waters would, in fact, unite the habitats, in light of the possibility that the salamanders had adapted to their separate environments during their nearly 100 years of manmade interventions at the site. Also, the question of whether harm from possible predators in the intervening waters might make salamander interactions difficult, even impossible, would be considered. Possible genetic consequences of this proposal would also be evaluated. The evaluation would also include consideration of other related federal laws applicable to this site. In discussions with Texas Historical Commission staff, the proposal was met with stiff resistance, citing concerns of numerous negative adverse effects on the historic fabric of the place. The Barton Springs Archeological and Historic District is listed on the National Register of Historic Places. From these preliminary reviews with the primary regulatory authorities for the required federal permits, it seems that the approval process would be quite challenging.

DESIGN CONSIDERATIONS

Lower Water Level and the Pool Deck

When we visualize a swimming pool, we generally visualize an easy relationship between the pool deck and the surface of the water, where the deck is relatively close to the water. Sitting on the edge and dangling feet in the water, and effortlessly slipping into the water are experiences whose importance simply goes without saying. Barton Springs has historically enjoyed this relationship, though it was weakened by the construction of the bypass tunnel in 1975, where the deck toward the west rises away from water level (and diminishes the appeal of this part of the Pool). Lowering the water level without also lowering the decks would so diminish the experience of the Pool that this should not be contemplated. The alternative, lowering the decks all around, is so expensive and intrusive that it should also not be contemplated.

Consider the implications. Lowering the north deck implies rebuilding the bypass tunnel. (The original construction of the bypass tunnel closed the Pool for the entire 1974 season). It implies redesigning all of the stairs and the accessibility ramp. It also implies that the retaining walls would need to be made taller, or new walls added, because the lawns are



Point of Information: The water surface of the existing Pool about 93,000 sq. ft. Enlarging the Pool and lowering the water as shown, the water surface would be about 140,000 sq. ft., about 50% larger.

Enlarge the Pool

- *A. By moving the Pool, the existing Bathhouse is in a poor location for its intended function. The Pool would require a new bathhouse, and the existing building would need a new function.*
- *B. Lowering the water level makes much of the shallow end dry, requiring new design consideration for accommodating small children and their families.*
- *C. If the water level were lowered, then the walking decks would also need to be lowered. The relationship of the deck to the water is too important to the character of the place and the experience of the Pool to do otherwise. Lowering the decks would require rebuilding the bypass tunnel. It would require adding retaining walls to the lawns on both sides of the Pool. The construction would likely close the Pool for an entire season.*
- *D. An ideal location for a new bathhouse would be somewhere near the middle of the reconfigured Pool. It could be one large building located on one side or it could be two smaller buildings located on both sides.*
- *E. Because it would be new construction, it would need to meet the requirements of today's building codes. Simply due to today's plumbing fixture requirements, the building would be larger than the existing Bathhouse.*
- *F. The unofficial "Dog Park" would be displaced by this proposal. Its new location would have more difficult access.*

The relationship of the pool deck to the water level has always been important to the character of the place and the enjoyment of the Pool. Lowering the water level would require a corresponding lowering of the decks to preserve the experience as we know it. Photo: Will van Overbeek.

already as steep as they can reasonably be. These reasons contribute to the recommendation against enlarging the Pool.

Plumbing Fixtures

Were Barton Springs a newly proposed swimming pool, its number of required plumbing fixtures would be calculated by criteria set forth in the International Plumbing Code, using factors for the surface area of the water, the pool decks and the usable lawn area. The intention is to match the number of fixtures to the size of the user population. By these standards, today's Barton Springs would require over 160 water closets. By comparison, this plan proposes to rehabilitate the existing Bathhouse with ten water closets (not counting those dedicated to public, non-pool users).

Plumbing Fixture Math

To many, the numbers reported here may seem so staggeringly high as to be unbelievable. It is important to recognize that these numbers are based on the sizes of pool elements, and Barton Springs, with its two acres of water surface and two acres of usable lawn areas, is an exceptionally large facility.

Because it is historic, Barton Springs Pool enjoys an exemption from these requirements. But if the Pool were enlarged, the exemption would be lifted, and modern requirements would govern. Enlarging the Pool would require somewhere between 200 and 225 water closets, depending on final configuration. There is a corresponding increase in requirements for lavatories and urinals.

Even if these preliminary fixture requirements are high, it would be imprudent to estimate the size requirements for bathhouses at anything less than 14 times current numbers. This could be accommodated in a single facility or multiple facilities. But the substantial increase begs the reasonable question, where would this be located? These facilities are best sited somewhere near the middle of the Pool, but at Barton Springs, Eliza Spring and the Zilker Playscape are on the north and sports fields and Sunken Garden are on the south, making a suitable site difficult, if not impossible to find. Furthermore, the very bulk of the new facilities would change the aesthetic and "natural" aspect of the park experience. All of these reasons contribute to the recommendation against enlarging the Pool.

MAINTENANCE AND STAFFING CONSIDERATIONS

An enlarged Pool would require a significant additional commitment of staff and operations budget. Aside from the additional equipment and supplies, more lifeguards, more pool-cleaning staff, more maintenance personnel and more grounds personnel would be required.

ESTIMATED PLUMBING FIXTURE REQUIREMENTS

	EXISTING POOL			ENLARGED, LOWER WATER			ENLARGED, DON'T LOWER WATER		
	AREA (sq. ft.)	÷ *FACTOR*		*AREA (sq. ft.)*	÷ *FACTOR*		*AREA (sq. ft.)*	÷ *FACTOR*	
WATER AREA	92,500	50	1,850	140,000	50	2,800	160,000	50	3,200
DECK AREA	16,810	15	1,121	21,810	15	1,454	25,810	15	1,721
LAWN AREA									
south	76,500	50	1,530			1,530			1,530
north	20,000	50	400			400			400
TOTAL OCCUPANTS			4,901			6,184			6,851
men			2,450			3,092			3,425
women			2,451			3,092			3,426
	length	x width	area	length	x width	area	length	x width	area
DECK CALCULATIONS	950	11	10,450	1,200	11	13,200	1,400	11	15,400
	540	9	4,860	790	9	7,110	990	9	8,910
	150	10	1,500	150	10	1,500	150	10	1,500
			16,810			21,810			25,810

	EXISTING POOL		ENLARGED, LOWER WATER		ENLARGED, DON'T LOWER WATER		CURRENT PROPOSAL
WATER CLOSETS							
men	*62*	42	*78*	52	*86*	58	3
women		121		154		170	7
URINALS		20		26		28	2
LAVATORIES							
men		40		51		56	4
women		40		51		56	5
DRINKING FOUNTAINS		17		21		23	4

PLANNING VALUES

Every plan is based on a set of values, and this plan's can be found in its goals statement that commits to, "make appropriate additions and renovations. . . . .that respect the fragility of this unique natural and historical setting." Enlarging the Pool and all that that entails does not fit with these values.

FUTURE CONSIDERATIONS

Were the recommendation against enlarging the Pool not being made for other reasons, these could be issues needing further study.

Water Quality, Flow Regime

Everyone knows that Barton Springs is a spring-fed pool. Since neither chlorine nor any other chemicals are used, water quality is simply a function of clean spring water replenishing "older" degraded Pool water spilling over the downstream dam. The "older" water is degraded due to exposure to human use.

This proposal to enlarge the Pool would increase the surface of the Pool water by half, with an estimated volume increase between 70 and 85%. Since the inflow volume is finite, coming from a natural spring, its contribution to overall water quality would be diluted in a larger Pool. Would enlarging the Pool push water quality to a tipping point, where it would be unsafe for swimming?

Pool Depth

Based on the last known bathymetry (in the 2000, Preliminary Algae Control Plan, by Alan Plummer Associates), the Pool gets progressively deeper as it approaches the downstream dam, where it is (was) about 13 ft. deep at its deepest. Informal observations of swimming activity below the dam suggest that, if the dam were relocated, the water would be considerably shallower there. The point is that enlarging the Pool is likely to involve reshaping the creek bottom to diminish the potential for trapping sediment and debris in the current deep part.