

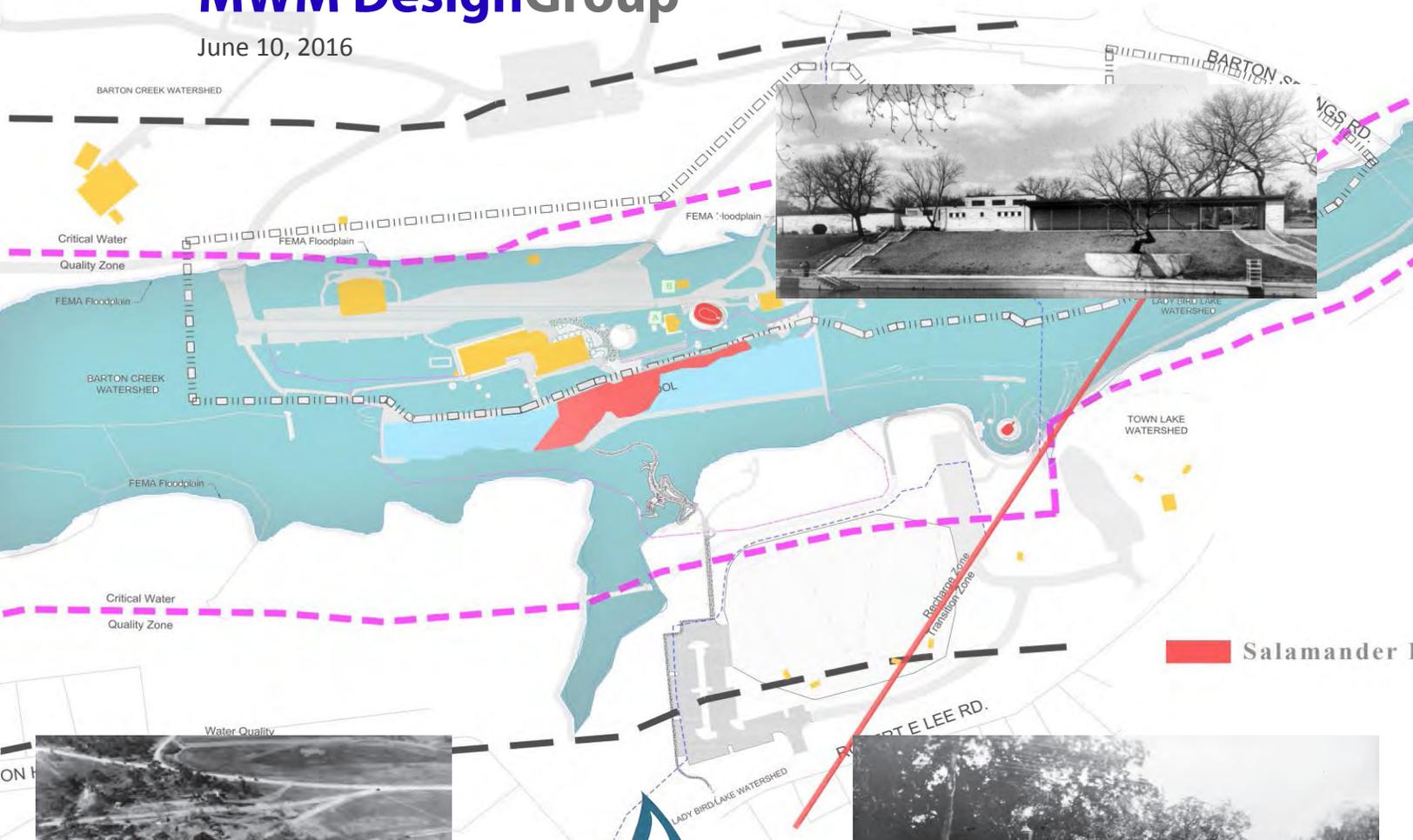
Zilker Park Bathhouse Zone Feasibility Study



City of Austin
Parks + Recreation Department

MWM Design Group

June 10, 2016



Zilker Park Bathhouse Zone Feasibility Study

Prepared for:



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This study was prepared, and issued 10 June 2016, under the authority of W. Owen Harrod PhD, AIA, LEED AP. The text, illustrations, and appendices of this study are issued as a single unified document. This unified document is not for regulatory approval, permitting, or construction.

Portions of this study subject to the Texas Engineering Practice Act were prepared, and issued 10 June 2016, under the authority of Brandon Hammann, PE. No element of this study, as issued, is intended to be constructed in the State of Texas.



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I. EXECUTIVE SUMMARY

This study examines the feasibility of various improvements to grounds and facilities in the Barton Springs Pool area of Zilker Park which has been recognized for generations as the “soul of Austin”. The recommendations in this study incorporate the goals of the 2008 Barton Springs Pool Master Plan (BSPMP) and the challenges of the numerous environmental, historical and local regulations that apply to this area.

This study entails an assessment of existing buildings and amenities located on the north side of Barton Springs Pool between the Violet Crown Trailhead and the Pecan Grove Picnic Area, an area referred to herein as the Bathhouse Zone.

These facility assessments include evaluations of condition, regulatory constraints and suitability for intended function. The study also includes broad investigations of the current code constraints as they may apply to rehabilitation efforts or new projects.

In addition to numerous field investigations of site and facility conditions, interviews were conducted with operating and management staff to assess current practice, operational needs and program challenges in the Bathhouse Zone.

The public was engaged in several meetings and public briefings as well as providing over 1300 responses to two surveys. This input revealed many additional opportunities, directions and priorities for consideration.

The study concludes with detailed recommendations for three broad efforts:

- Moving forward with planned and funded projects including; installation of parking meters, daylighting of the Eliza Springs outlet, construction of the Violet Crown Trailhead restrooms, and replacement of the Maintenance Barn with removal of the existing maintenance facilities and surrounding fences.
- Phased rehabilitation of the Bathhouse using available funding to complete full design, access improvements and possible plumbing system replacements. Future efforts, with potential for public private partnerships, would restore the bathhouse rotunda and dressing areas. This effort would be contingent on the relocation of the Sheffield Education Center and SPLASH! interactive environmental exhibit to a proposed Interpretive Center within the Bathhouse Zone and would include relocation of the Aquatics spaces (first aid, staff lockers and break/meeting area, storage and management office) into the former women’s basket area. The rotunda area and former men’s basket space could become an interpretive gallery and multi-purpose space.
- Site design centered on the Playscape area including; reconfiguration of the Bathhouse parking lot, replacement and expansion of the playscape with a more natural design, siting studies for a new Interpretive/Visitor’s center, and circulation improvements – especially the widening of the main path and associated relocation of the train tracks.

II. INTRODUCTION

The Austin community and visitors from around the world come to Zilker Park to enjoy Barton Springs Pool and the surrounding facilities in increasingly larger numbers. The Parks and Recreation Department wants to ensure the facilities and management meet a high standard of excellence to maintain this crown jewel of the City into the foreseeable future.

Any improvements should be in accordance with the Barton Springs Pool Master Plan (BSMP), as approved under Council Resolution 20090115-028, which includes the following goals statement to guide future efforts:

Return the site to its rightful glory where the water was cleaner and the experience of the pool was more enjoyable. Propose appropriate additions and renovations to the swimming pool, its buildings and its grounds that respect the fragility of this unique natural and historical setting, and also accommodate the significant user demands on Austin's most popular park amenity.

While the Barton Springs Master Plan focused on the Pool and adjacent facilities, the goals provide guidance for the whole Bathhouse Zone. The facilities in this Zone are so interconnected that careful consideration of the entire area was necessary before developing any further projects in this area. The recommendations developed in this study are an evolution of the BSMP in accordance with these goals.

The Master Plan recommends several short-term and long-term projects. Some short-term projects have already been completed from that list including critical repairs and improvements to the south side of the Pool. Funding has been provided to initiate several other projects including relocation of the Maintenance Barn, grounds improvements, Bathhouse rehabilitation and the new Trailhead restroom.

A key constraint of the Bathhouse Zone is the existence of the Barton Springs Complex and the habitat the springs provide for two species of endangered salamanders. Swimmers share Barton Springs with this critical habitat under a permit issued by the U.S. Fish and Wildlife Service that includes specific commitments to inform the community through education and interpretation. The Sheffield Education Center and the SPLASH! Into the Edwards Aquifer exhibit were built in 1998 in the areas that formerly housed the Bathhouse basket areas and rotunda to satisfy these requirements. Approximately 80,000 visitors enter the SPLASH! exhibit each year and many thousands of school children participate in various education programs.

The Barton Springs area has a long and rich history from Native American times through pioneer Texas settlement to Depression era improvements into our modern times. This legacy is detailed in the Cultural Resources Report presented to PARD in 2012. The area that comprises the Bathhouse Zone is included in the 1985 Barton Springs Archeological and Historic National Register District and the 1997 Zilker Park National Register Historic District. Furthermore, the Barton Springs Bathhouse was designated a State Antiquities Landmark in 1994 and designated as a City of Austin Historic Landmark in 1990.

The Bathhouse is the primary architectural feature of the historical designations. When it was constructed in 1947 it included facilities to rent towels and swimsuits and to store visitor property in a mechanized system of baskets. After floods in the late 1960s these services were dropped and a primary entrance to the pool was developed on the southeast corner of the Bathhouse – the historic point of access to a viewing gallery overlooking the pool – where it remains today. Along with this effort the Aquatics group that runs

II. INTRODUCTION (CONT'D)

the pool was expanded into a portion of the women's dressing area. As of 2016 the historic Bathhouse facility is approaching the seventieth anniversary of its construction and many elements, especially the plumbing systems, changing stalls and canopies, show significant deterioration.

Over seven hundred thousand estimated visitors enter Barton Springs Pool each year. On busy summer days over three thousand a day enter through the Bathhouse gate with many standing in long lines. Smooth access and emergency egress through the Bathhouse requires changes to the current entrance patterns.

The combination of protected environment and historical elements presents a unique opportunity to provide a comprehensive interpretive program that enhances the environmental, historical and recreational experience in the Bathhouse Zone.

The playscape in Zilker Park is perhaps the most used in the City but its components are reaching the end of their service life and do not reflect current best practices. The grounds and amenities in the Bathhouse Zone are in need of repair, replacement and improvements with new restrooms, water fountains and benches high on the list of concerns.

The plaza in front of the Bathhouse is the nexus of pedestrian, bike and vehicular circulation for the central section of Zilker Park. However, the current alignment of the Zilker train tracks and the primary trail from Barton Springs Road to the Violet Crown Trailhead is less than ideal. The existing parking lot includes more impervious area than is required and drains directly to the bypass tunnel and thence the lower reaches of Barton Creek.

The Bathhouse Zone is perhaps the most heavily regulated area in the City of Austin. Striking an appropriate balance within the challenging regulatory environment – flood plain, impervious cover limits, building codes, Barton Springs Pool Master Plan, protected cultural resources, heritage trees, endangered species and accessibility – to meet the goals of the BSPMP and the increasing demands of the public will not be easy.

For many years the Parks Department has been challenged to meet the many demands of patrons in the Bathhouse Zone. Many of the recommendations made in this study will have impacts on staffing, operations, and maintenance obligations associated with the Pool and the surrounding areas of Zilker Park. Accordingly it is imperative that the implementation of any of these recommendations be coordinated with changes to operational and staffing requirements.

This study has been prepared in accordance with the 2008 Barton Springs Pool Master Plan and in conjunction with a process of public engagement, meetings with stakeholders, and consultation with jurisdictional officials. Many of the recommendations contained in this study are interrelated, and are intended for implementation as components of a coordinated plan of improvements.

VI. BATHHOUSE REHABILITATION

The Bathhouse is both the most prominent element existing within the Zilker Bathhouse Zone, and the building with the most complex program. Given that the extent of improvements recommended for the Bathhouse Zone as a whole will be contingent on the specific solutions adopted for the Bathhouse itself, the following is a detailed description of specific programmatic considerations applicable to the Bathhouse deriving from the summary of Program Needs and from the objectives of the Master Plan.

A. Life Safety and Access Improvements

Bringing the north side of the existing pool enclosure into compliance with current codes will necessitate fundamental revisions to the existing means of access to the pool. These revisions pertain most specifically to egress from the pool, although given the requirements imposed by the Texas Administrative Code on access to public pool facilities, specifically that “all doors, gates, and windows in the enclosure [be] directly and continuously supervised by staff at the pool during hours of operation, or locked to prevent unauthorized entry”, it is recommended that where feasible the required means of egress correspond to supervised points of entry.

Insofar as “moving [the] ticket counter back to rotunda” is an explicit objective of the Master Plan, due consideration has been given to the access implications of such an intervention. Objectively a staff member stationed in the rotunda could provide the mandated supervision of as many as four additional entry and egress points divided between the two original entry corridors in the Bathhouse. There is no other solution that would offer such an improvement in the access to and from the pool enclosure for so small an obligation in staff supervision. The rotunda was specifically designed in order to provide supervision of the two original entry corridors.

Of alternative locations for access to the north side of the pool, the existing entry point is too constrained by both existing trees and the configuration of the historic spectators’ gallery to be easily expanded, whereas a location at the opposite end of the Bathhouse, although located at the top of the only accessible route to the pool deck, does not presently possess a viable ticket office.

The restoration of the original entry corridors would require the identification of an alternate location for the storage activities presently occurring adjacent to the men’s changing area, as well as modifications to the existing electrical infrastructure in this location.

With respect to access to and from the pool, the historic gender segregation of the original men’s and women’s corridors should be abandoned. From a code standpoint, a corridor that is proposed as a required means of egress cannot be segregated by gender (nor can it be located in an area so segregated). Pragmatically the de-segregation of the corridors would better accommodate the needs of all pool users, including specifically parents arriving with opposite-sex children, as well as allowing for the scalability of the means of entrance (at times of limited demand one of the two entrance corridors could feasibly remain closed, potentially alleviating supervision and maintenance responsibilities accordingly). Such a de-segregation could be easily accomplished through the introduction of screen walls at the respective dressing areas, a simple and proven solution that could be implemented without compromising the historic appearance, or the surviving historic structure, of the dressing areas.

VI. BATHHOUSE REHABILITATION (CONT'D)

In order to comply with current code, the means of egress from the pool enclosure must include a “safe and unobstructed” exit discharge to a safe dispersal area per IBC 1027.5. In the context of the Bathhouse such a safe dispersal area would be interpreted to be a point above the Flood Hazard Zone. This will require that modifications to the Bathhouse be designed in conjunction with site circulation improvements to facilitate this “safe and unobstructed” exit discharge.

B. Systems Rehabilitation

The existing building systems in the Bathhouse, including the mechanical, electrical and plumbing systems of the building, are approaching a serviceability limit state. The continued operation of the Bathhouse will require a plan for the renewal of building systems. In addition there are serious deficiencies with the structural integrity of building elements such as the changing stalls and canopies in the men’s and women’s dressing areas that must be addressed to facilitate such continued operation.

The Bathhouse was not designed to be an artificially air-conditioned building. The existing building envelope is not insulated, and the existing doors and windows are too thermally-inefficient to comply with current codes. In the context of rehabilitation of the Bathhouse building, consideration should be given to those building volumes that have to be artificially air-conditioned, with envelope improvements (insulation and weather-sealing) and equipment specification coordinated in unified design. Where possible, consideration should be given to not artificially cooling building volumes such as the former basket rooms and rotunda, in which case passive or low-intensity active measures (such as ceiling fans) could be utilized in accordance with the intent of the original design, allowing the preservation of historic features such as operable clerestory windows and ventilation louvers.

The existing building electrical system, although functional, incorporates elements such as the installation of electrical equipment in areas such as the former men’s corridor, are not consistent with either the current use of this space for equipment storage or for the potential restoration of the corridor for public circulation. During the rehabilitation project, obsolete electrical infrastructure should be replaced and the configuration of the electrical system amended in accordance with the proposed building improvements.

The existing building plumbing, particularly the underfloor wastewater infrastructure, is known to be in poor physical condition. Where this wastewater infrastructure is visible, as at the points of connection of plumbing fixtures, root infiltration has been a serious concern. The degree of observed infiltration indicates the impending failure of the wastewater plumbing. In the context of the building rehabilitation, the building plumbing should be replaced as needed. Such replacement will necessitate the reevaluation of the drains for the open-air showers and coordination with the Plumbing Official on the implementation of a solution consistent with current code in conjunction with the rehabilitation of the existing storm sewer system within the Bathhouse.

Plumbing improvements should include the replacement of the associated plumbing fixtures with safe, sanitary, and accessible and water-efficient modern fixtures, standardized throughout the building.

VI. BATHHOUSE REHABILITATION (CONT'D)

The glazed structural tile changing stalls in the men's and women's dressing areas are in poor physical condition. The deteriorated state of these stalls appears to result in part to a deficiency of the original building design, which did not include separate structural footings for the stall partitions. Insofar as the stall partitions serve to buttress the exterior building walls the design should be evaluated for resistance to calculated flood loads. The reinforcement and reconstruction of the partitions can be accomplished to enhance the structural stability of the Bathhouse as a whole without changing the exterior appearance or the historic character of the changing stalls.

The cast concrete shade canopies in the men's and women's dressing rooms are also in poor physical condition, exhibiting pervasive indications of rusting of internal steel reinforcing and spalling of the protective concrete. Insofar as these failures are indicative of deficiencies in the original construction (including irregular and inadequate concrete cover at reinforcing and an excessively porous concrete mix design) repair of the existing canopies is not a viable alternative. Apart from being complex and costly to achieve, such repair would not address the inherent faults of the original construction. Accordingly it is recommended that the canopies be replaced with new elements preserving significant features of the original design but incorporating the substantial advances made since the 1940s in both the technology and the standards of quality in cast-concrete design.

C. Rotunda and Dressing Area Rehabilitation

Improvements to the Bathhouse addressed by the BSMP include the restoration of the historic function of the building, including the original use of the rotunda as the venue for ticket sales and the primary point of entrance to the pool.

Relocating ticket sales to the rotunda logically requires the restoration of the historic entrances to the dressing rooms, particularly as an efficient response to state regulations pertaining to supervision of points of entry to public pools. Given current operational considerations, restoration of gender-segregated entry corridors is not a viable alternative. Although making the entry corridors gender-neutral would require the addition of visual screening at the entries to the dressing areas, the design of such screening could be coordinated with necessary structural improvements and the installation of modern plumbing fixtures. The introduction of such screens would permit the restoration of the historic transaction windows at the basket rooms, restoring to some extent the open character of the central block of the building in accordance with the original design. In addition, the layout of the women's dressing room should be restored, to the greatest extent practicable, to the configuration of this original design. The primary objective of modifications to both the men's and women's dressing rooms should be the preservation of the historic materials, design elements and character of the dressing rooms for the next century of active public use.

D. Sheffield Education Center Improvements

Per the council-approved Barton Springs Pool Master Plan, long-term projects for the Bathhouse Zone include "enhancements to the Beverly S. Sheffield Education Center, including the design and installation of a new Visitor's Center", a project more explicitly described as involving "moving ticket counter back to

VI. BATHHOUSE REHABILITATION (CONT'D)

rotunda; expanding and refurbishing women's changing area; adding a unisex bathroom; [and] relocating classrooms elsewhere”.

These proposals have been specifically investigated in the context of the present study. Of these proposals, the relocation of the ticket counter, expansion of the women's changing area and addition of new gender-neutral toilet facilities all require, given the constraints imposed by the fixed size and configuration of the existing Bathhouse and the historical designation of this building, the relocation of other occupancies existing in the structure.

Based on the presumption that the reduction in area of either of the existing changing areas was not a viable proposition, the only other potential alternatives for the reordering of the Bathhouse would be the relocation of Aquatics facilities or of at least some portion of the Sheffield Education Center. To ensure efficiency Aquatics operations should be consolidated within the existing Bathhouse to facilitate the effective operation and maintenance of the pool: relocating Aquatics from the existing Bathhouse is not a viable proposition.

With respect to the educational function of the Sheffield Education Center, considered for the purposes of this discussion to include all areas of the Sheffield Education Center other than the SPLASH! exhibit, the programmatic functions of the facility have exceeded the capacity of the existing building volume allocated to these functions. Most significant in this regard are considerations of emergency egress from the Sheffield Education Center, in accordance with current code, as the Building Official has stated are a prerequisite for any modifications to the existing facility.

The building code, as locally amended, would require construction within the Sheffield Center to be consistent with the original flood-resistant construction of the Bathhouse. Compliance with this standard is technically feasible, although not inexpensive. The potential complications for the Sheffield Education Center are that most thermal and acoustical insulation materials and finish materials are not flood-resistant by nature. Insofar as the rehabilitation of the Bathhouse will be subject to compliance with City of Austin Council Resolution 20071129-045 concerning sustainability requirements for City buildings, this will pose a particular challenge.

There are technical solutions to concurrently addressing the compliance liabilities associated with the Sheffield Education Center, which include the preservation of historical features, compliance with both structural and material flood-resistance requirements, and improving energy performance in response to Resolution 20071129-045. However the cost of implementing these solutions will easily exceed the objective value of the existing building envelope. In simple terms, it could be less expensive to build an exact reproduction of the existing Sheffield Center to current code on a site out of the flood plain than to reconstruct the Sheffield Education Center to the same standard in its present location. Although counterintuitive, the economic realities of reconstruction of existing historic buildings to comply with current codes have been shown repeatedly in detailed studies, including most recently in the comprehensive assessment of the Dougherty Arts Center, a building similarly located within a Flood Hazard Area.

VI. BATHHOUSE REHABILITATION (CONT'D)

Any relocation of the Sheffield Education Center must consider the potential implications to the existing City of Austin permit from the U.S. Fish and Wildlife Service enabling recreational use of Barton Springs, and would ideally be done in a manner that ensures continuous operation of the existing facility until the new facility may be occupied.

None of the restrictions pertaining to flood resistance or limiting expansion of the Sheffield Center would apply if the facility were located to a new building sited above the floodplain. Pragmatically such a new structure would be the simplest and most cost effective means of obtaining the “enhanced” Sheffield Center referenced by the Master Plan. A Sheffield Center even twice the size of the existing facility would still be a very modest structure. An obvious opportunity of such new construction is that the Center could be a model of sustainable design, incorporating materials, systems and components more consistent with the Center’s objectives.

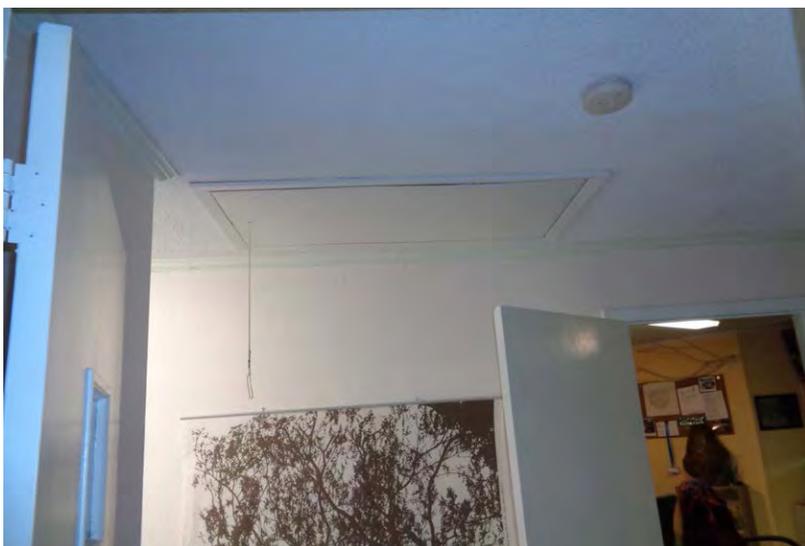
VI. BATHHOUSE REHABILITATION (CONT'D)



Sheffield Center Classrooms: The existing classrooms are too small. The emergency exit discharging into the pool enclosure is inconsistent with both the current Building Code and the Texas Administrative Code.



Sheffield Center Offices: The limited support space available to Sheffield Center staff constrains the efficient operation of facility programs.



Sheffield Center Storage Space: Operation of the Sheffield Center is facilitated by the utilization of a mezzanine above the classrooms, accessible through this pull-down ladder.

VI. BATHHOUSE REHABILITATION (CONT'D)

E. SPLASH! Exhibit Improvements

Unlike the office and educational facilities associated with the Sheffield Education Center, the existing SPASH! exhibit is not manifestly inconsistent with the presumed B occupancy of the Bathhouse, and accordingly could be considered a valid pre-existing use of the building. Under such circumstances an argument could be made for the exhibit to remain unchanged in its present location. The existing condition, however, suffers from the same deficiency in supporting facilities as the remainder of the Sheffield Education Center.

Leaving the SPLASH! exhibit in its present location, a solution which would be subject to the concurrence of the Building Official, would obligate any future permanent construction of the exhibition to be compliant both in terms of structural performance and composition per IBC 801.5, pertaining to flood-resistant construction. Accordingly this solution would represent only a deferral of compliance, insofar as under current code at such time that the exhibit was substantially altered or restored, due either to the pending functional obsolescence of the existing exhibit infrastructure or the damage resulting from a flood event, any future construction requiring a building permit would have to be fully compliant with the applicable provisions of the code.

F. Visitor's Center

The Bathhouse Rotunda and the SPLASH! area currently function as an informal point of welcome to the Bathhouse Zone with the assistance of the Sheffield staff. Such a welcome center is normally located at or near the point of entrance to a building or facility and there is currently a clear public perception that the Bathhouse rotunda serves as this point of entry. However the current facility does not have the layout or resources to be well suited as a Visitor's Center for Zilker Park. As noted above, provision of a new Visitor's Center is a principal objective of the Master Plan. Insofar as §25-7-96 of the Austin City Code limits the construction of structures within a floodplain to "a restroom or bath facility, concessions stand, tool shed, or pump house with an area less than 1,000 sf", alternatives available for the construction of such a facility are limited to locations above the Flood Hazard Zone.

Establishing an accessible connection between the Bathhouse and the area above the Flood Hazard Zone is a priority for both the Bathhouse and the pool enclosure; such a pathway provides an opportunity to integrate the siting and experience of the Bathhouse and Visitor's Center. The parking lot adjacent to the Bathhouse will only accommodate a small percentage of peak attendance to Barton Springs. There are at present approximately 130 parking spaces adjacent to the Bathhouse. Accordingly the majority of visitors to the pool will arrive from other locations within the park, including the remote parking areas utilized by the majority of these visitors.

Ideally the Visitor's Center can be located to welcome Zilker park visitors and this majority of visitors to the Barton Springs Pool as a part of a unified circulation plan to better manage pedestrian access and protect critical root zones through the Zilker Bathhouse Zone. The Visitor's Center should be positioned where it will be the obvious destination for pedestrians approaching the pool complex from throughout Zilker Park and where it can provide a safe drop-off area to accommodate visitors arriving by personal and transit vehicles.

VI. BATHHOUSE REHABILITATION (CONT'D)

A Visitor's Center located above the floodplain should be placed within 500 horizontal feet of the existing Bathhouse rotunda, to which it would be connected through an accessible route with interpretive features – in accordance with the comprehensive interpretive plan for the Bathhouse Zone, seating, a water quality feature and other site improvements. Additional landscaping and a better organized plaza should be included to allow the Bathhouse Zone to better accommodate large numbers of visitors.

The program for such a Visitor's Center could be easily merged with a new Sheffield Education Center facility sharing needed infrastructure and integrating its environmental awareness and educational functions into the visitor experience of the park.

VII. RECOMMENDATIONS (CONT'D)

2. Zilker Train

The popularity of the Zilker train, which has been in operation since the early 1960s, is undeniable and the preservation of this iconic feature of Zilker Park should be prioritized. Nevertheless a detailed study should be undertaken to determine potential modifications to the train right of way to better reconcile the costs and benefits associated with such preservation. Such a study should consider two principal opportunities each of which should be considered as long-term projects, requiring both detailed planning and coordination with concessionaire contracts.

- Redesign the train right of way to mitigate detrimental impacts As the infrastructure of the Zilker train, specifically the track, approaches the end of its serviceable life, consideration should be given to modifications of the alignment, the track section itself (including consideration of trackway sections more compatible with other park uses), and particularly the turning loops at the ends of the present right of way. Such modifications should include the dedication of an appropriate area for the storage, maintenance, and fueling of train locomotives in a location removed from the most crowded and environmentally sensitive area of Zilker Park.
- Increase the utilization of the train to better mitigate the intrusive presence of its right of way If the train served as a means of transporting visitors throughout the park a number of potential benefits could accrue. Options might include developing train stops at locations along its right of way. Such a solution might also serve to better integrate the Botanical Garden and Nature and Science Center into the Park particularly for visitors with small children or limited physical abilities, for whom the distances between these features effectively require driving to each attraction individually.

It should be recognized that regulatory obligations applicable to the operation of the train as a means of public transit would be significant. However it may be possible to continue operating the train as an attraction while increasing the utilization of this resource.

D. Barton Springs Bathhouse

In accordance with the findings of this study, it is recommended that the existing Barton Springs Bathhouse be the subject of a Request for Qualification solicitation for an architectural team experienced in historical rehabilitation to undertake a phased program of rehabilitation consistent with the objectives of the 2008 Barton Springs Master Plan and in accordance with the Secretary of the Interior's Standards for Rehabilitation of historic structures. Such a rehabilitation program should be phased to facilitate the relocation of the existing Sheffield Education Center and SPLASH! to a new location above the Flood Hazard Zone with the goal of ensuring continuous operation of existing educational programming to comply with the conservation measures in the City's permit from the U.S. Fish and Wildlife Service. Public education should remain a part of the bathhouse through interpretive panels and other means of sharing educational information will be incorporated into this entry into the pool.

VII. RECOMMENDATIONS (CONT'D)

1. Bathhouse Rehabilitation

a) Phase 1: Life Safety and Access Improvements

The first priority for the rehabilitation of the Bathhouse should be modifications to the accessing access and egress provisions for Barton Springs. It should be recognized that the primary objective of such improvements is not solely to facilitate the evacuation of the pool in the event of a flood, but rather to ensure that the number of occupants expected to be using the pool can be directed by a safe, orderly, and fully-accessible means to a point of safe dispersal as defined by code.

Planning for access and egress control will require both the identification of additional pathways into and out of the pool, and the implementation of a corresponding entry control procedure. Such improvement would also need to include additional means of emergency egress from the men's and women's changing areas, due to the nominal occupancy of each these facilities exceeding that permitted for a single exit.

With respect to new ingress and egress pathways it is recommended that the two original access pathways to the men's and women's dressing areas be restored. By so doing, four additional points of ingress (and egress) could be created in a location where they could be observed by a single staff member positioned in the rotunda, with two new entry gates or turnstiles at the entrance to the former men's corridor, and two at the entrance to the women's.

In order to make the best use of the two entry corridors, it is recommended that new screen walls be constructed at the men's and women's changing areas so that the entry-corridors would no longer be segregated by gender. Such an improvement would be mandated by code insofar as required means of egress cannot be gender-segregated but also better accommodate families using the pool as well as allowing for the closure of one of the two corridors at times of limited demand.

b) Phase 2: Changing Area Improvements

The second phase of improvements would entail the replacement of the plumbing systems in the existing building resolve serviceability concerns with the existing infrastructure. Such improvements would entail the replacement of plumbing fixtures in the men's and women's changing areas with sanitary, water-efficient, and accessible fixtures, as well as the introduction of new gender-neutral/family toilet and shower rooms to better serve the needs of pool users.

Plumbing improvements would include the replacement of the functionally-obsolete piping comprising the existing sanitary and storm sewer systems serving the bathhouse. Such improvements would facilitate the resolution of compliance deficiencies in the existing infrastructure and would facilitate an improved level of service through the elimination of sections of existing piping compromised by root infiltration and differential soil movement. Properly designed plumbing infrastructure will resolve existing problems such as the inadequate drainage of the existing concrete canopies (particularly where interior gutters exist between the canopies and the exterior walls of the changing areas) and facilitate, through the incorporation of cleanouts and manholes, the long-term maintenance of the building sewers.

VII. RECOMMENDATIONS (CONT'D)

Plumbing improvements would consider, to the extent permissible under current code, the water-efficiency objectives outlined in the approved Master Plan. Alternatives worthy of consideration would include graywater recycling and the enhancement of solar water heating alternatives, although any such strategy would have to be proven through a detailed cost/benefit analysis. Such improvements would also necessitate an innovative solution to facilitate the preservation of the existing outdoor showers.

c) Phase 3: Relocation of Aquatics Facilities

The third phase of improvements would be contingent upon the construction of a new facility to relocate an expanded Sheffield Education Center. This phase would need to be carefully scheduled to ensure that no significant interruption in service affected the Sheffield Education Center or the SPLASH! exhibit, which would be intended to remain in their present location until such time as a new facility could be opened to the public.

This relocation would permit the consolidation of Aquatics offices, operational, maintenance and storage facilities associated with the pool into a new, expanded and consolidated facility in the former women's basket area. It should be noted that these pool uses are permitted within the Floodplain by the LDC, and moreover that such functions are compatible with flood-resistant construction.

d) Phase 4: Rehabilitation of Rotunda and Changing Areas

With the relocation of the main Aquatics facilities, the women's changing room could be restored to approximately its original size and configuration. Rehabilitation of the changing areas would be intended to preserve the historic character of these facilities while addressing both significant maintenance liabilities associated with peculiarities of their original construction, and better accommodating the needs of modern pool users in the size, configuration, and degree of privacy provided by changing stalls.

Rehabilitation of the changing areas would include the detailed analysis, and potential strengthening, of elements of the existing building envelope to ensure the structural ability to resist future flood events.

After the relocation of the more delicate or sensitive components of the existing SPLASH! exhibit it is recommended that a significant area of its former location be retained for educational purposes. The original configuration of the basket rooms, tall open volumes provided with natural ventilation and ample daylighting through clerestory windows was very different from that presently existing. Restoring elements of the historic configuration of the basket rooms would help facilitate the understanding and appreciation of the original design of the building. Such restored facilities could include interpretive displays on the Barton Springs Pool and its cultural and environmental significance, enhancing the experience of pool visitors. Public access to a general purpose space and/or the rotunda could allow for additional viewing of the pool and the main, Parthenia Spring.

VII. RECOMMENDATIONS (CONT'D)

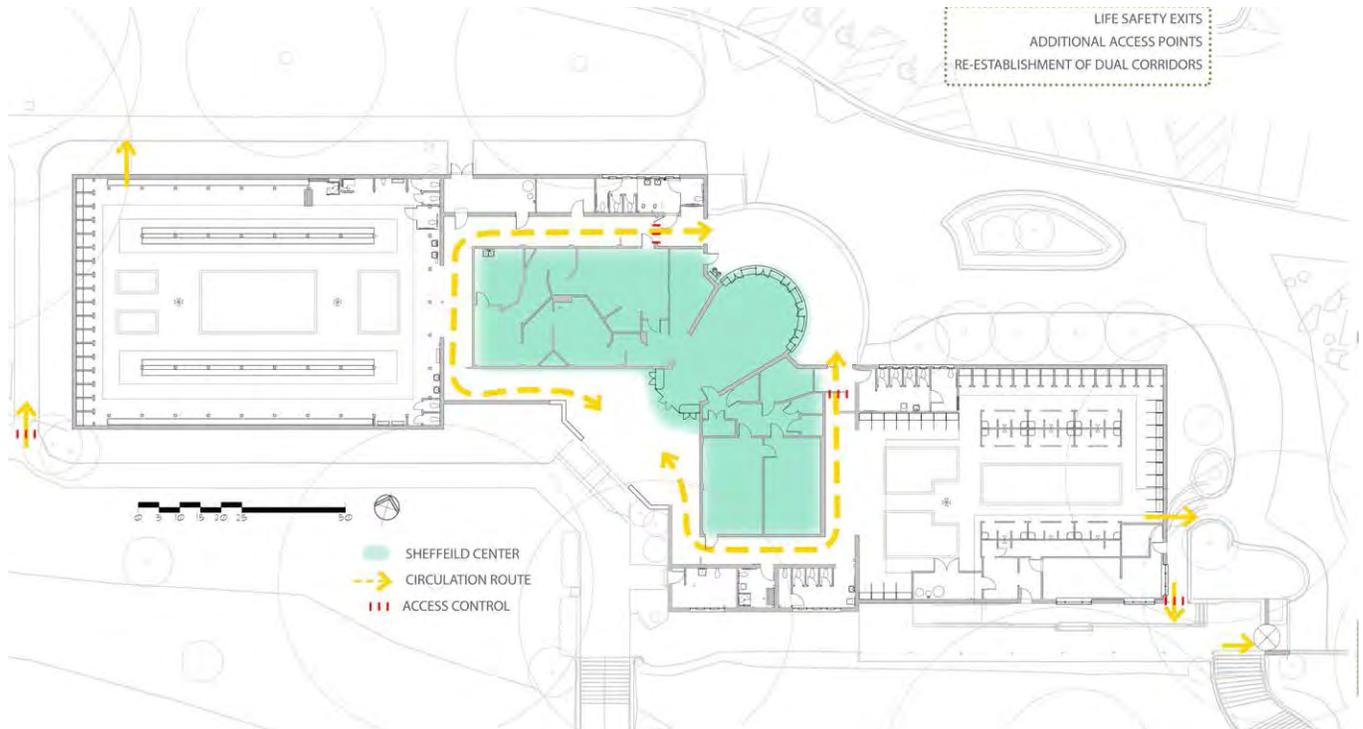
2. Sheffield Education Center Improvements

Relocating the Sheffield Education Center appears to be the most viable means of both ensuring the continued (and uninterrupted) operation of the educational programs of the Sheffield Education Center as presently conceived and expanding the existing facilities (including specifically the provision of accessible staff workspaces and classrooms sized in accordance with projected demands) to serve these programs. Although maintaining the Sheffield Education Center in its present location might be considered a viable short-term solution, it could only be considered as such until the next inundation of the Bathhouse. Since under current code the Sheffield Center could not be restored in its present condition following flood damage, such a short-term solution would result in the possibility that the operation of the Sheffield Center could be disrupted without any viable plans for its immediate restoration.

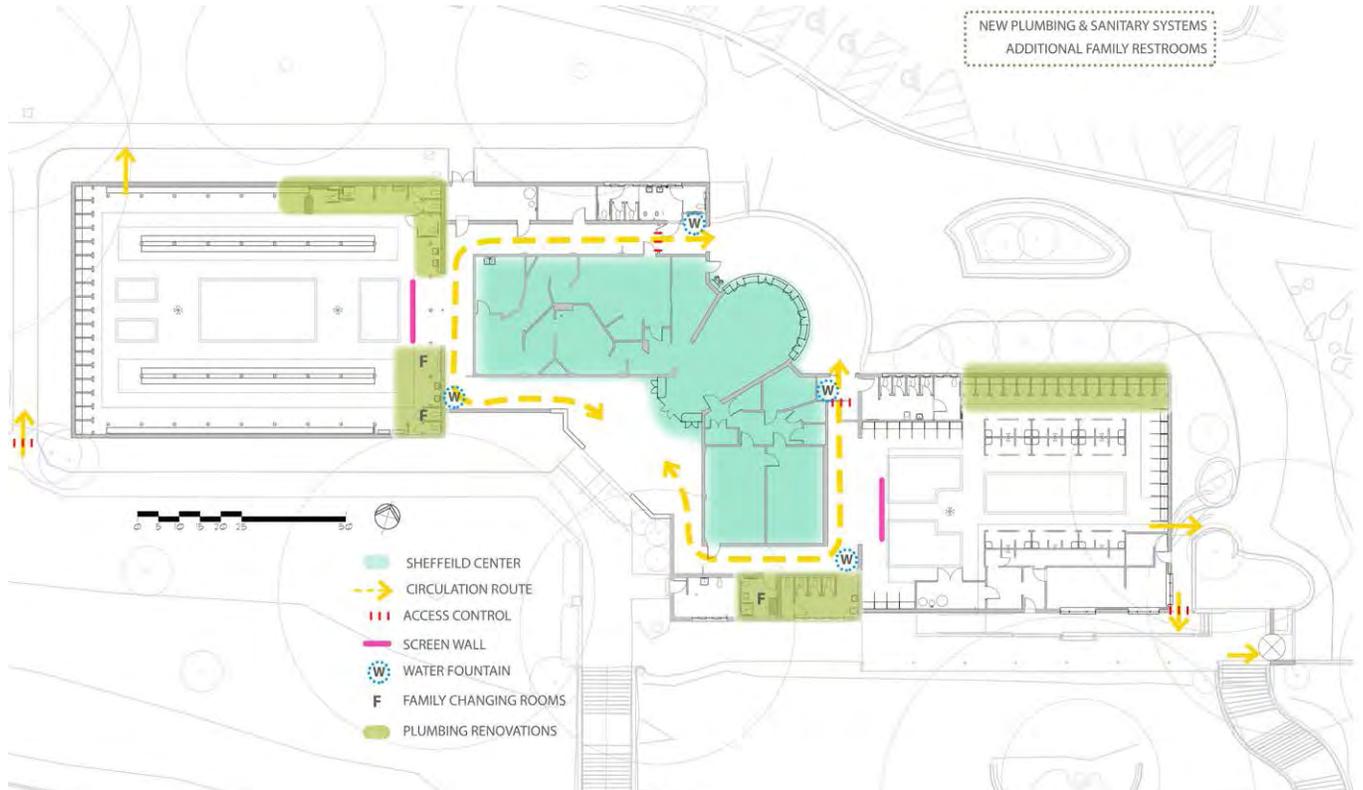
The best solution for a new Sheffield Education Center would include the construction of more durable portions of the SPLASH! exhibit in publicly accessible, possibly exterior locations where they would be viewed by the maximum number of visitors to the springs. The bathhouse entry areas could also incorporate flood-resistant interpretive elements. Those elements of the current display that require more secure locations to avoid vandalism and ease maintenance should be incorporated in the new Interpretive Visitor's center with the Sheffield Education Center. This would further incorporate the minor separation between the two buildings into an integrated educational program. This interpretive program should include state-of-the-art interactive elements and living-animal displays within the climate-controlled environment of a new Sheffield Education Center, as well as experiential exhibits concerning the aquifer and its protection.

A relocated Sheffield Education Center could be combined with a new Visitor's Center for the park, making the educational elements of the Sheffield Center an integral part of any introduction to Barton Springs and Zilker Park. It is recommended that PARD finalize a program for this facility in coordination with the recommended design efforts and proposed partnerships.

VII. RECOMMENDATIONS (CONT'D)

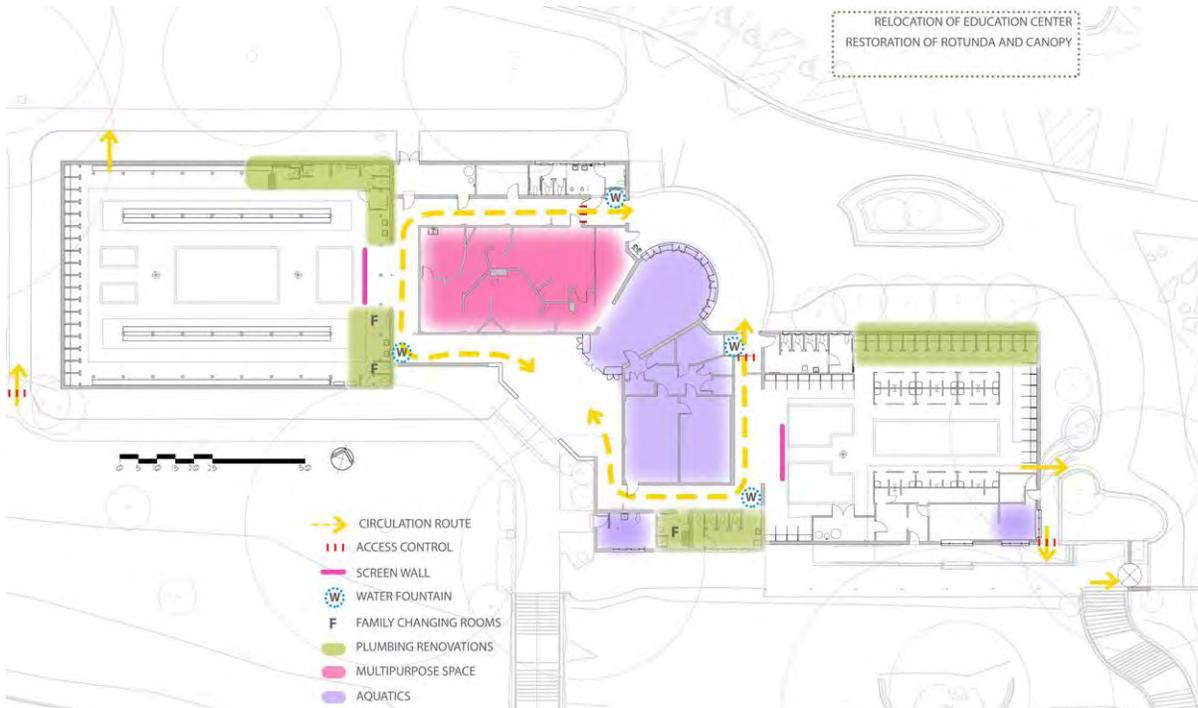


Bathhouse Projects, Phase One: Rehabilitation of the Bathhouse will necessitate a phased plan of improvements in order to minimize disruption during the construction period. The initial project phase should address life-safety concerns pertaining to the Bathhouse and the pool enclosure.

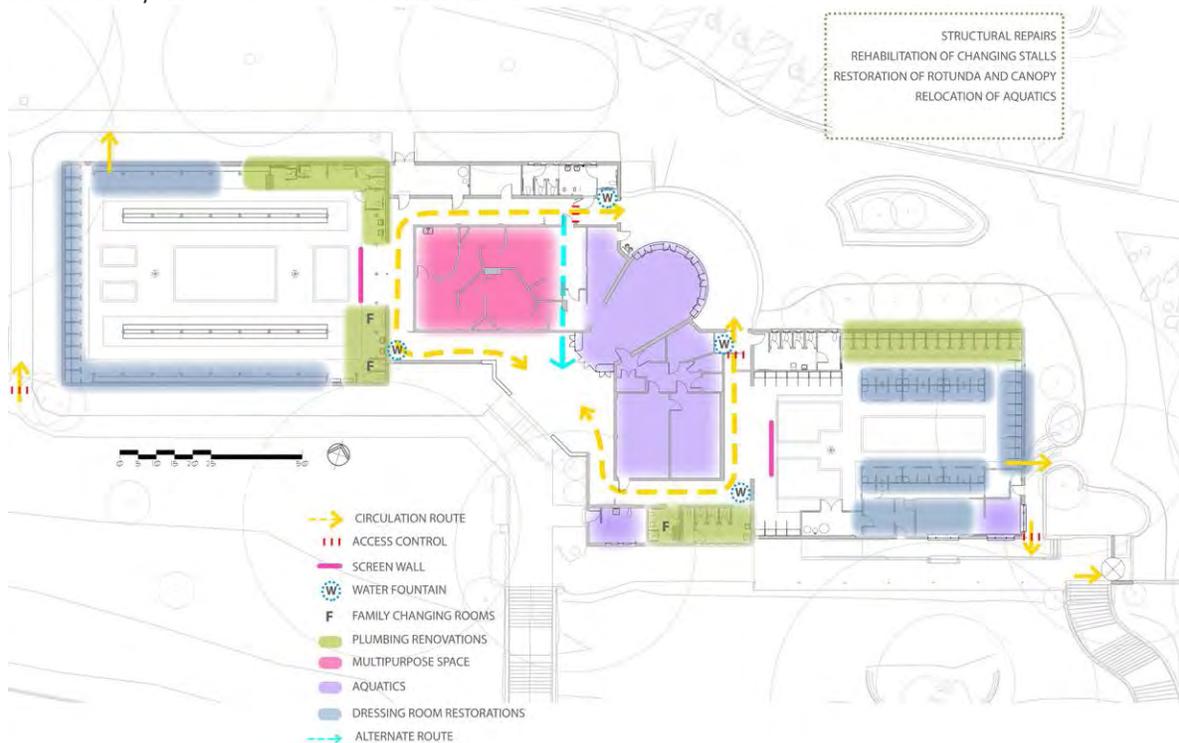


Bathhouse Projects, Phase Two: The second project phase should address rehabilitation of existing plumbing systems and the installation of new amenities such as drinking fountains and gender-neutral changing rooms.

VII. RECOMMENDATIONS (CONT'D)



Bathhouse Projects, Phase Three: The third project phase should address the rationalization and consolidation of those functions necessary to the continued operation of the pool. This project phase would be contingent on the relocation of the educational functions of the Sheffield Center to a new facility located out of the Flood Hazard Zone.



Bathhouse Projects, Phase Four: The final project phase should address the restoration of the men’s and women’s changing areas. This project would entail the substantial reconstruction of the deteriorating masonry elements in the two changing rooms to provide safe, stable, and flood-resistant replacements while preserving the character and quality of the originals. This phase may include exhibition or interpretive functions within the Bathhouse, designed in accordance with current codes and coordinated with the educational objectives of the relocated Sheffield Center.

VII. RECOMMENDATIONS (CONT'D)

E. New Visitor's/Interpretive Center

As noted above, provision of a new Visitor's Center is a principal objective of the Master Plan. It is recommended that the site improvements package in B. above include the development of site plans for a combined Visitor and Educational center totaling 6,000 to 8,000 square feet. A location near the children's playscape parking lot would be easily accessible and visually connected to the Barton Springs Road entry, the Bathhouse, Eliza Spring and other nearby amenities.

With obvious synergies between a new Visitor's Center, the Sheffield Education Center, and the SPLASH! exhibit, it is recommended that these functions be accommodated in a single new building. Doing so would be beneficial both in terms of the cost per square foot of the individual facilities (due, for example, to the ability to share infrastructure such as restrooms and building systems) and would firmly integrate the Sheffield Center and its educational functions into the visitor experience of the park.

F. Estimated Budgets

On the basis of cost data from recent City of Austin projects of comparable scope and complexity, the following budget numbers are projected for the individual project elements projected in this feasibility report. Costs quoted are total project costs, including estimated costs of construction, design costs, fees, and project management.

Estimated Project Costs	
Site Improvements	\$2M - \$3.3M
Parking Lot (and water quality feature)	\$700K-\$1.2M
Playscape	\$800K-\$1.1M
Trail & Amenities	\$500K-\$1M
Bathhouse Improvements	\$3.2M-\$4.9M
Phase 1 Life Safety/Access	\$100K-\$300K
Phase 2 Building Systems Repair	\$1.2M-\$1.6M
Phase 3 Aquatics Relocation	\$700K-\$1.3M
Phase 4 Rotunda & Dressing Rehabilitation	
New Visitor Center/Sheffield Education Center	\$3.5M-\$5.5M
(6,000 to 8,000 sf)	