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Marshall Aquatics Center Study

Marshall, Minnesota / July 2019

Prepared By
292DesignGroup

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The consultant team for this study included:

- » 292 Design Group
- » Reengineered, Inc.
- » RJM Construction

EXECUTIVE SUMMARY

Existing Facility Assessment

The Marshall Aquatic Center has served the residents of Marshall and surrounding communities for more than 50 years—a long time for a community recreation facility. The current facility is showing its age and has numerous deficiencies in code compliance, operations, customer experience and maintenance costs. This report was undertaken to determine what is the most reasonable approach to providing the residents of Marshall with aquatic recreation opportunities.

292 Design Group and Re-Engineered have assessed the existing pools, deck area and building to determine their long-term viability to serve Marshall residents. Our review has indicated that all the components of the center need extensive improvement, repair, or modification to create an aquatic center that provides an enjoyable summer aquatic activity in a safe manner, and one that is accessible to all and efficient to operate.

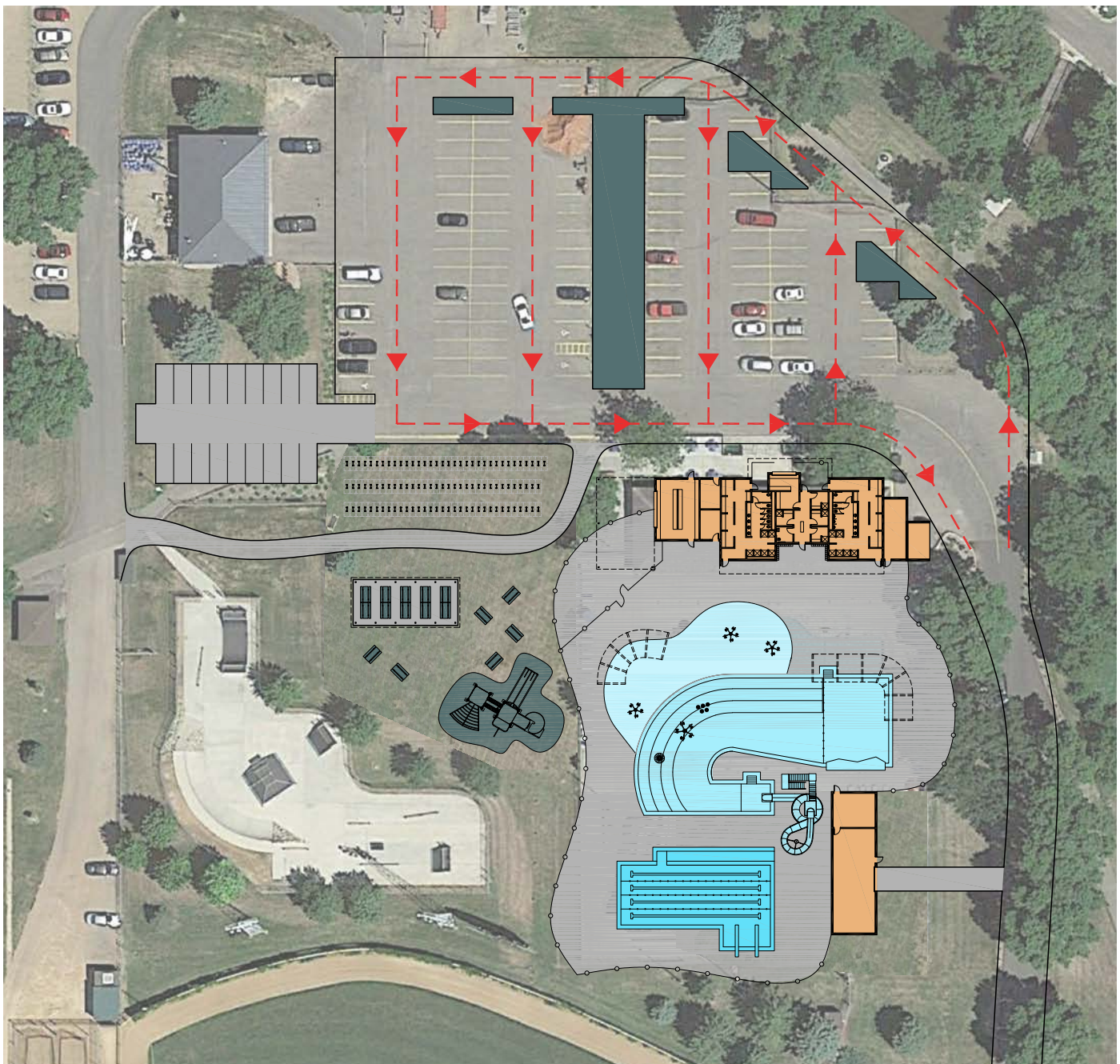


Diagram illustrating new aquatic facility and park improvements

Recommendations

This report recommends constructing a new aquatic center on the site of the existing facility. This report concludes that remodeling costs will be so high and will be so constrained that only replacement makes good economic sense. The city has gotten more than 50 years of use out of the existing aquatic center which is a good return on the original investment. It now makes the most economic sense to construct a new facility. We understand the hesitancy to demolish a facility that is still functioning, even at a sub-standard level. However, we feel that it would be inappropriate to invest more of the taxpayers' money into the existing facility.

The facility we recommend in this report provides the city with state-of-the-art municipal aquatic center that will be open to everyone, will provide a wide variety of activities for all ages, will be safe, and will add to the recreational opportunities for the residents of Marshall. The proposed aquatic center includes two pools and a splash pad, a bath house and new concessions.

POOLS

The proposed, new aquatic facility includes two pools. The first is a 4-lane, 75-foot long pool sized for regulation lap swimming and a 40'x40' foot diving well that can be used for a variety of water activities such as water volleyball and basketball, swimming lessons, diving, scuba diving, kayak lessons, life guard training, water aerobics, fitness swimming, and interactive play. Other features such as a water slide, climbing wall or floatable rafts are other options that could be exciting features of the pool.

The second pool, typically called a leisure pool, includes a variety of interactive features and, most importantly, a beach-like entrance (also called a zero-depth entry) and lots of shallow water to play in. This pool allows for a variety of play activities and is particularly great for young kids and families. Features that spray, dump or shower people with water are scattered about. A splash pad—a large play area with fountains and other interactive water features but without any standing water—would also be incorporated. This area is particularly safe for the youngest children.

BATH HOUSE

A new bath house, designed for today's users and providing greater functionality for staff, would include more comfortable changing areas, private showers, restrooms that are more accessible, and upgraded finishes (tile floors and walls etc.).

Staff spaces would be improved with more storage and break space for lifeguards. The check-in area would have ample space for large group to be processed efficiently. Lifeguards would have a space for their required breaks and sufficient ample storage for equipment.

A new concessions area would be included and would meet current health department standards. It would also provide staff an opportunity to expand the refreshment and food options with the potential increases in sales.

SITE

The existing site contains enough land area for a new aquatic center. Constructing the new aquatic center on the existing site takes advantage of the existing utility infrastructure and parking lot. A new aquatic center will require some improvements and modifications to the park including the parking lot, access drive and paths. These need to be studied in more depth should the project proceed to make sure the aquatic center is well integrated into the park and its other activities.

This report includes plans that outline the ideas expressed above and an estimated cost for implementing the work. Should the council elect to proceed, demolition of the existing facility and construction of the new facility would take approximately 12 months and would require closing the aquatic center for one season.

BUILDING ASSESSMENT

Overview

On March 13th, 2018, Mark Wentzell from 292 Design Group and Nick Nowacki of Re-engineered, accompanied by City of Marshall Parks and Recreation staff, toured the existing Marshall Aquatic Center. The tour initiated an assessment of the physical condition, operational efficiency, customer experience and code compliance of the aquatic center. The assessment provides guidance to the City of Marshall as to whether or not they should update and remodel or replace the existing pools, surrounding deck area and bath house building. The assessment is intended to help the City make prudent and appropriate decisions for the aquatic center.

The existing Marshall Aquatic Center includes three (3) vessels: a diving pool with 1-meter and 3-meter diving boards, a lap/general use pool with a waterslide, and a wading pool. It also includes a bathhouse and concessions building. The original facility was constructed in 1960's.

Bath House and Concessions Building

Constructed in the 1960's the existing bath house and concessions building suffers from many conditions typical of a building more than 50 years old. It has numerous code compliance issues and many of the building components are inadequate, function poorly or are decayed beyond reasonable repair. The

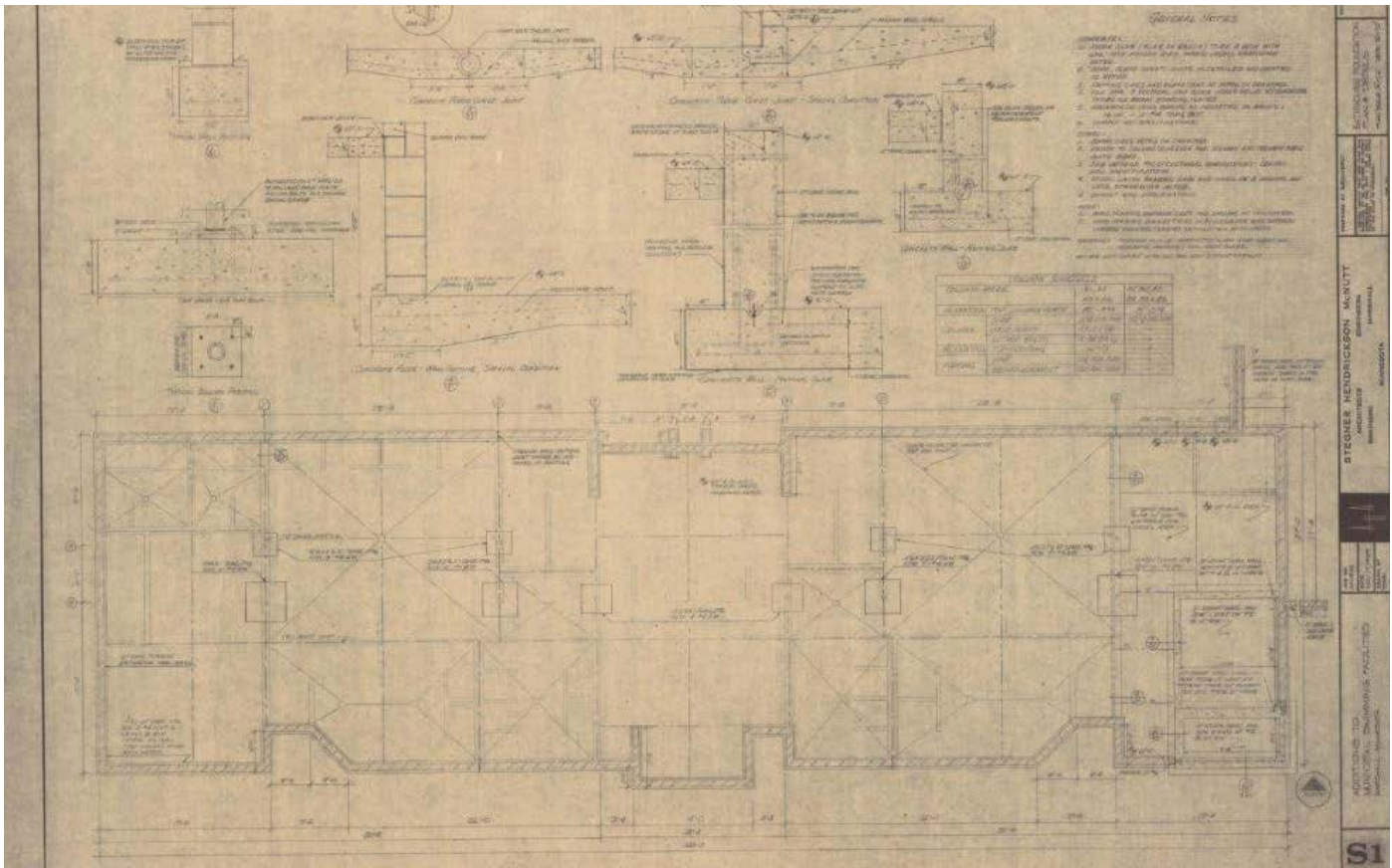
building also has numerous issues in how it serves the users and presents itself to the public. City staff have made a good effort to maintain the building over time and to make accommodation for the changing uses and expectation of the public, but its limitations are extensive.

ADA COMPLIANCE

Many areas of the building do not meet the American with Disabilities Act and building access is complicated by the height above grade.

- » A ramp to the west side makes the building accessible, but most visitors access the building via the stairs.
- » The entry check-in area and doorways into the changing rooms do not comply with required ADA clearances.
- » The check-in desk is too high.
- » Changing area are open and accessible, but shower and restroom facilities do not meet ADA standards for access to plumbing fixtures.
- » Clearances, grab bars, fixture size and type are all non-compliant.

Once out on the pool area, most of the deck area seems to comply, but the pools do not. Although there are lifts to assist a person with disabilities in entering the pool, current standards require a ramp into the lap and diving pool. The current



Original blueprints of the Marshall Aquatic Center

BUILDING ASSESSMENT

pools do not have that condition. The wading pool although compliant to the ADA regulations it does not have a ramped access.

Updating the existing pools and building to meet current ADA standards would be difficult and expensive. Because the building is largely constructed of concrete block, demolishing existing walls and constructing new ones is costly. The pool vessels need modification to comply, which would mean rebuilding part of the walls and floor, which is also costly.

Note: ADA compliance can be enforced at any time, and require reasonable accommodation for all building patrons. This is particularly concerning at the restrooms and shower areas.

BUILDING CONDITION

The physical condition of the building structure is not bad considering its age. The basic outside walls and roof structure are in reasonable condition and only need routine maintenance into the near future. (A roof replacement is currently planned as the roof is in need of replacement.)

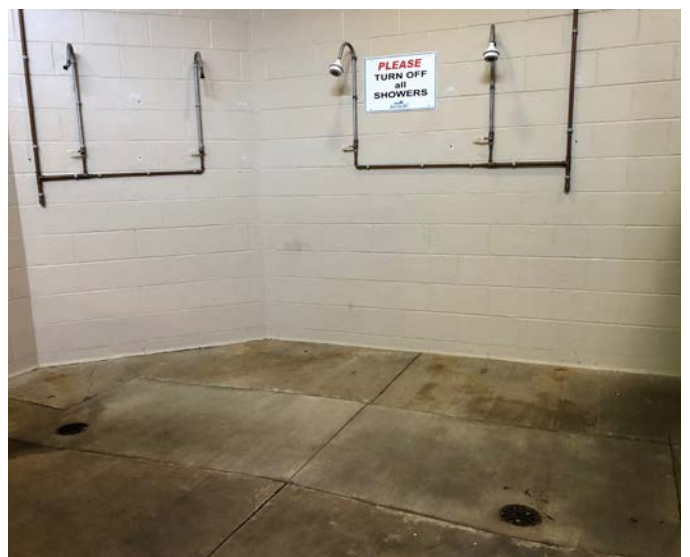
The wood clerestory windows are in poor condition and their design allows water to infiltrate, making it difficult to maintain them. If the building is to be maintained, these should be replaced, in addition to replacement of flashings and waterproofing in the roof. All the other openings – doors and windows – are also in poor condition and should be replaced. If replacement is done, correcting the ADA issues will be required which may mean some of the adjacent masonry walls would need to be altered.

The interior poses the greatest challenge to the building. Much of it is in poor and unattractive condition. Today's users of recreation facilities expect the facilities to have a high-quality, attractive finish and fit their expectations of a good recreational experience. The current facility does not meet that standard. The locker rooms and restroom facilities need extensive remodeling. Today's users also expect greater privacy in the changing and showering area. The existing building's changing, shower and toilet areas are wide open with little privacy screening. The changing areas should be divided into smaller bays for more privacy and showers should be the individual type rather than open. (There are some individual showers in the women's locker room, but they are small and makeshift.) The restroom areas need to be replaced, in total, with new ADA compliant fixtures and a more useful layout.

Remodeling locker rooms and rest rooms is costly. There is extensive plumbing work, expensive wall construction (tile, concrete masonry, etc.), tile floors and plaster ceilings. In addition, much of what is existing would need to be demolished, which is another expensive cost.



Existing toilet rooms that lacks privacy screening



Existing, open shower area

BUILDING ASSESSMENT

MECHANICAL AND ELECTRICAL SYSTEMS

The mechanical and electrical systems have deteriorated and in need of repair. Water line breaks are common and waste lines are failing. There is a significant problem of sewer gas entering the shower area of the building and staff have made a makeshift repair that needs replacement.

The staff has had to make many repairs to the plumbing systems and these repairs are exposed and add to the poor appearance of the building. Exhaust fans are old and inadequate and provide poor ventilation within spaces. Electrical systems are original. The main service panel is outdated and beyond its life expectancy and needs immediate replacement.

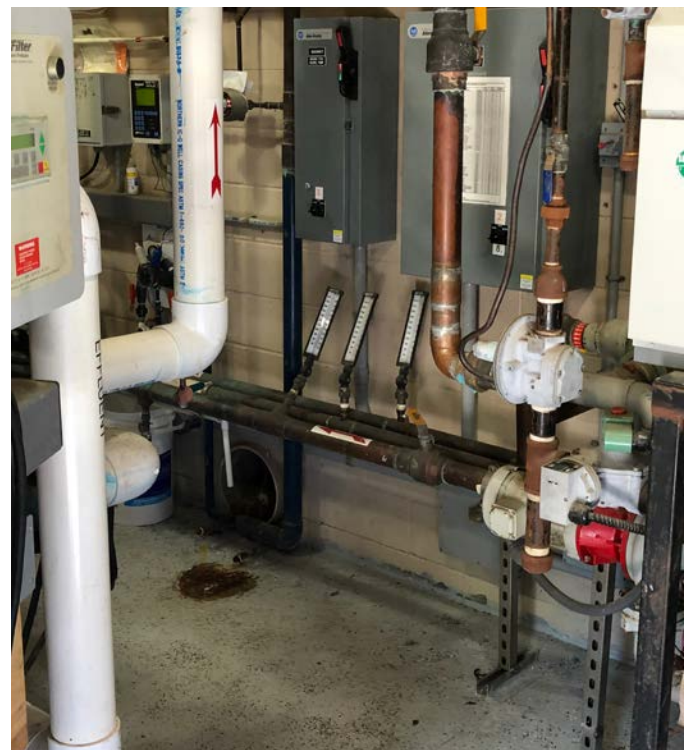
City staff should be complimented on the efforts they have made to keep the facility functioning, at low-cost, despite the many problems with the plumbing, ventilation and electrical systems. They have made extensive repairs to the existing systems to keep them functioning; many have been makeshift and are not long lasting. Once a building has required this many repairs, it indicates that replacement is the more prudent option.



Makeshift sewer gas repair in shower area



Outdated exhaust fan

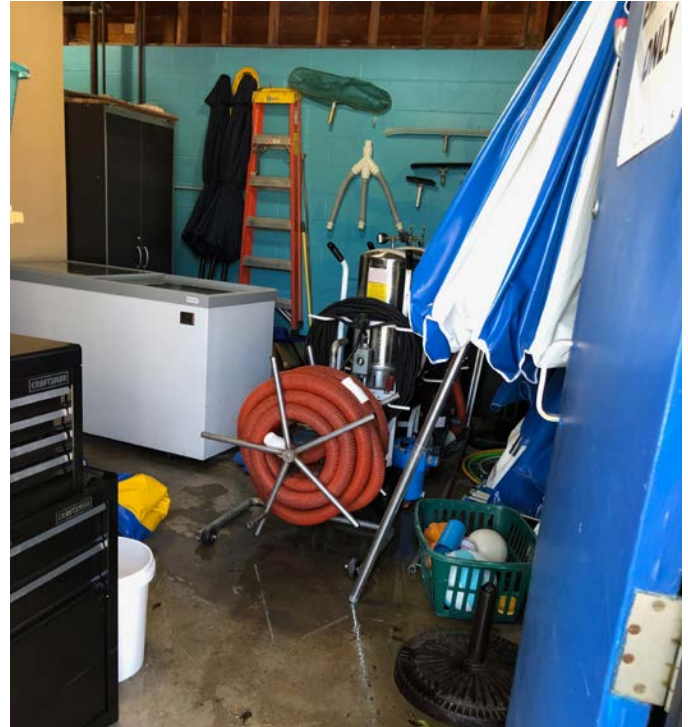


Existing service panels

BUILDING FUNCTIONALITY

The existing building does not meet the current recreational usage which creates difficulties for the staff in their day-to-day operations.

- » The check-in area does not function well for the number of visitors coming to the aquatic center. Being able to control access to the facility through this space is important and its current configuration makes that difficult. It is too small and queuing is difficult, as is control of access to the locker room and pools. Staff have tried to modify this area by adding doors and partial walls to make it function better, but the space is very limited. The height of the counter and the access through the doors does not meet ADA requirements.
- » Staff workspace is inadequate with little room for life-guards, program staff, and management staff in the office area. This area has largely become a storage area due to the lack of storage space.
- » The ability of the staff to take necessary breaks (away from the public) is limited. The only available space has continuous windows with a view to the pool area. Staff have tried to create more privacy with window screening.
- » Storage space is insufficient as well. Winter storage severely limited.



Storage space

CONCESSIONS

The concessions area has numerous deficiencies. Most critical is that it does not meet Minnesota Department of Health requirements. Floor, wall and ceiling finishes do not comply. The sinks for hand washing, food prep and dish wash are inadequate. The layout is extremely inefficient which limits the ability to serve the customers and affects potential income from food and beverage sales. There are also significant issues regarding the plumbing, ventilation and electrical systems.

The current concessions stand passes annual inspections, largely because it has been grandfathered in to current requirements. Food service operations can continue operating under previous regulations for a long time. Should the city undertake any kind of improvements or changes in operations, that would typically require updates throughout the concessions area.



Storage in the office area



Concessions storage

BUILDING ASSESSMENT

Pool Assessment

The lap/general-use pool and diving pool were renovated in 2008, including repair of significant structural failures within the diving pool. Structural failure of the vessels has reoccurred since the 2008 repairs. The structures of both the lap/general use-pool and diving pool have significant cracking and structural deterioration at the gutter joint, internal expansion joints, and wall to floor interface. Water intrusion is evident by the delamination of the concrete surface and associated tile and plaster finishes at these locations. City staff has documented that the lap/general-use pool and diving pool are currently losing water due to leaks at a rate of 12,000 to 15,000 gallons per day (1,080,000 to 1,350,000 gallons per summer based on a three month use period). This is an extreme amount of water loss for a pool vessel. Movement and flow of this magnitude of water around and beneath the vessels is likely creating significant unseen issues within the supporting soils and exterior face of the unseen concrete vessels beneath. It is extremely likely that the internal steel reinforcing is severely corroded in areas around and near the points of significant leakage.

We were not able to view conditions of the structures during our site visit as a result of snow cover, but based on discussions with city staff and the extreme amount of water loss it is apparent that structural failures or cracking have reoccurred since the 2008 repairs.

The pools have many problematic conditions. Tile is coming loose and missing in some areas, the concrete has separated from the gutters, there are numerous cracks throughout all the vessels, and caulking is failing. In general, the pools have outlived their expected life. Minnesota winters are hard on pools and 50 years is a long time frame.



POOL EQUIPMENT

The pool filtration and disinfectant equipment appears to be in fair condition. Much of it has been replaced; however, many pieces of equipment are nearing the end of their anticipated lifespan and planning should be made for their replacement or upgrade in the near future.

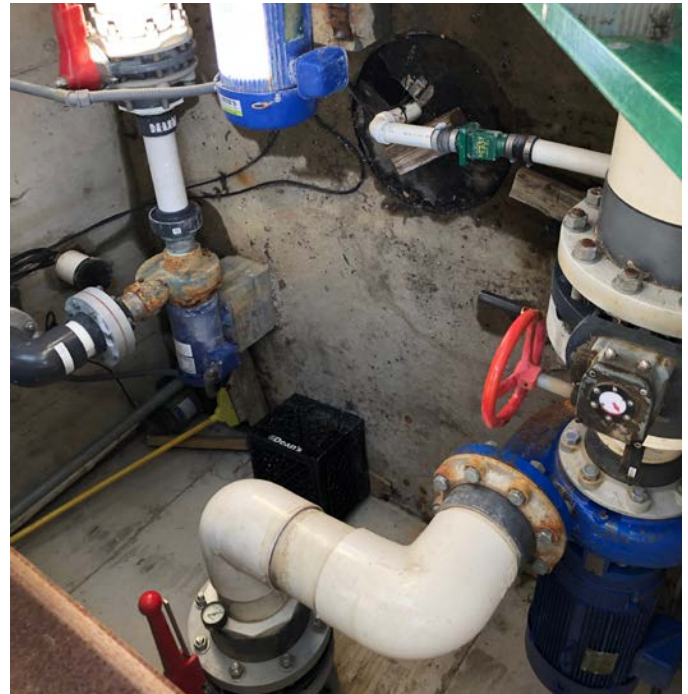
VESSEL AND EQUIPMENT RECOMMENDATION

Given the age, observation of structural failures, and verification of extreme leakage, it is our opinion that the pool vessel structures have exceeded their usable lifespan and need full replacement. It is also our opinion that vessel replacement should also include full replacement of all pool equipment—given the proximity to anticipated end of lifespan of the existing equipment and availability of new products and technology within the market.

CUSTOMER AND OPERATIONS

There are customer and operational issues with the pools as well. The small wading pool is severely outdated. Users have a major complaint about not having a sloping (zero-depth) entry into the pool. Young children have to step down into the 12-inch deep water or be helped by a parent.

Although there is a large amount of water area in the aquatic center, much of it does not fit current users' expectations. The two large pools are designed around lap swimming and diving. Visitors to aquatic parks expect a wider range of aquatic activities to participate in. The aquatic centers in Marshall's surrounding communities have more creative designs with a greater variety play features to entertain the customer. This creates an expectation that the current Marshall Aquatic Center does not meet.



BUILDING ASSESSMENT

Site Conditions

Access, traffic flow, and parking at the aquatic center have several conditions that should be addressed. The aquatic center, located within Legion Field Park, isn't visible from West College Drive, so signage is required to find the center. Access can be confusing to the first-time visitor. Within the park, the bicycle path crosses the drive near the aquatic center. This condition causes concern as children riding their bikes on the trail dart across the entry drive, often unaware of cars on the road. This situation should be addressed in any reconfiguring of the aquatic center and park. Another concern is that the main drive passes directly in front of the building entrance where there are conflicts between people walking across the drive from their parking space, or from people dropping off pas-

sengers (sometimes on the parking side of the entry drive) at the main entry. This study suggests a rerouting of traffic to a one-way system within the center's parking lot and entry drive to help alleviate this condition. There is a substantial need for bicycle parking within the site as well.

The existing aquatic center site appears to be adequate for any new aquatic center that the city proposes. A new center, properly configured, fits within the existing context. The new center should be integrated into the park and the other activities within the park including the skate park, new playground, picnic area, and ball field.



Aerial photograph of existing Marshall Aquatics Center

BUILDING PROGRAM

AQUATIC AREAS	
Leisure Pool	6,800 sf
<i>Zero depth entry , various play features, maximum depth 4'</i>	
Splash Pad	3,500 sf
<i>Wet play area with no standing water, Does not require life guarding</i>	
Lap Pool	3,500 sf
<i>4 lane, 25 yard pool with depths from 7'6" to 4'0" Diving from deck at deep end of pool only</i>	
Play Structures and Slides	
<i>Allowance for play structure, slides, climbing wall etc.</i>	
Total Aquatic Area	13,800 sf

DRY AREAS	
Leisure Pool Deck	8000 sf
<i>Includes seating area with shade structures</i>	
Splash Deck	2500 sf
Lap Pool Deck	4500 sf
Outdoor Concessions Seating	2500 sf
<i>Partially covered, separated from pool deck with low rail and gate to contain food and beverage</i>	
Walks	3000 sf
<i>Estimated area allowance</i>	
Total Deck Area	20,500 sf

BUILDING AREA	
Check in	160 sf
<i>12 foot desk with 2 check in stations</i>	
Mens Changing and Restroom	850 sf
<i>6 private showers, 2 toilets, 3 urinals, 5 sinks</i>	
Women's Changing and Restroom	850 sf
<i>6 private showers, 6 toilets, 6 sinks</i>	
Family Changing Rooms	470 sf
<i>4 changing rooms each with a shower and changing area</i>	
Single Occupancy Restroom	80 sf
Support Area	100 sf
<i>General work area behind check in</i>	
Lifeguard Room	150 sf
<i>Lockers for lifeguard staff, break space</i>	
Office	150 sf
<i>Work space for Aquatic director and assistant</i>	
Concessions Serving Area	320 sf
<i>16 foot serving counter - 4 stations</i>	
Concessions Prep and Storage Area	320 sf
Maintenance	380 sf
<i>Janitor utilities and storage</i>	
Trash Enclosure	160 sf
Subtotal	3,990 sf
Net to Gross Multiplier	599 sf
<i>15% for circulation/walls/utility area</i>	
Total Bath House & Concessions	4,589 sf
Pool Equipment	1400 sf
Mechanical/ Electrical/ Water Service	500 sf
Total Pool Mechanical Building	1,900 sf
Total Building Area	6,489 sf

PARK AREAS	
Playground	2100 sf
Picnic Area	8900 sf
<i>Include picnic shelter of 1,200sf?</i>	
Bike Parking	4500 sf
<i>200 bikes / asphalt.</i>	
Total Dry Play	15,500 sf

The aquatic center building program was developed with input from city staff and stakeholders. At the stakeholder meeting on March 13, 2019, participants expressed their desire for items such as increased opportunities for younger children, new amenities, an improved bath house, a concessions area in view of the pool area, a splash pad and more shade.

The building program includes aquatic elements that can accommodate a wide age range and program spaces (changing rooms, offices and concessions) that better serve patrons and staff.

CONCEPT PLANS

Site



Re-striped parking area and one-way, vehicle circulation path



Bath house including concessions, office and changing areas.



Splash pad with water play features and no standing water



Outdoor seating area for concessions, within view of aquatics area



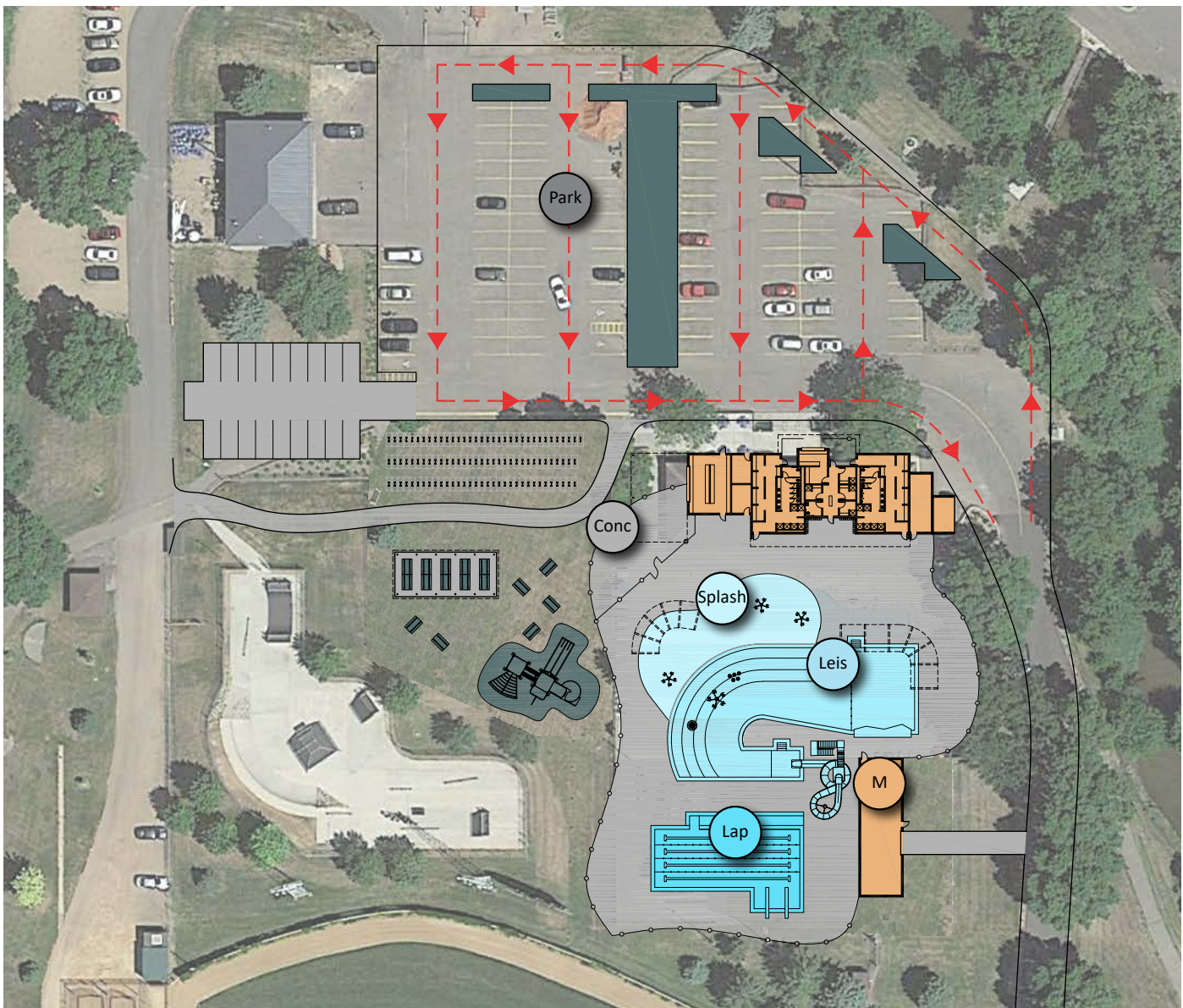
Pool equipment and mechanical space



Leisure pool with zero-depth beach entry, water play features, water slide and climbing wall



Lap pool (4-lanes) with diving well (3-meter and 1-meter boards)



Site plan of recommended aquatics center

Conc

The concessions area includes serving and storage space for an enhanced menu. It can service both aquatic center and park patrons and is adjacent to outdoor seating areas.

Off

The office area includes work space for the aquatic director and assistant.

LifeG

The life guard room includes space for lockers and staff breaks.

Check

The check-in area is expanded to accommodate large groups.

Maint

The maintenance area includes space for cleaning and pool supplies, access to utilities and general storage.

Trash

A trash enclosure is located near maintenance and accessible from an adjacent drive.

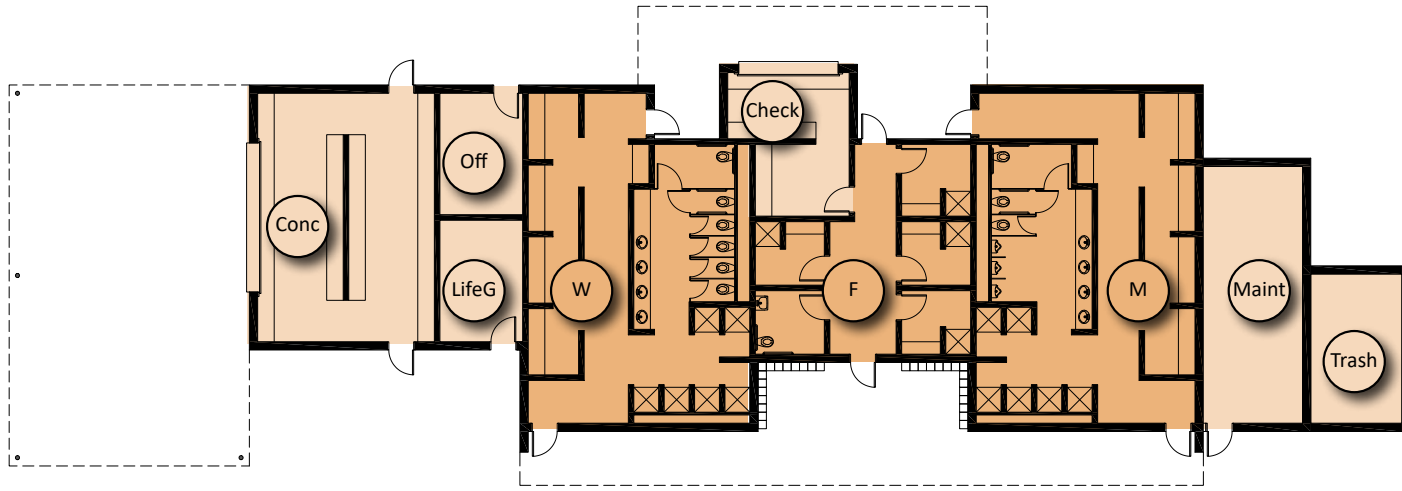
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The changing rooms for women and men include semi-private changing areas, individual showers and toilets.

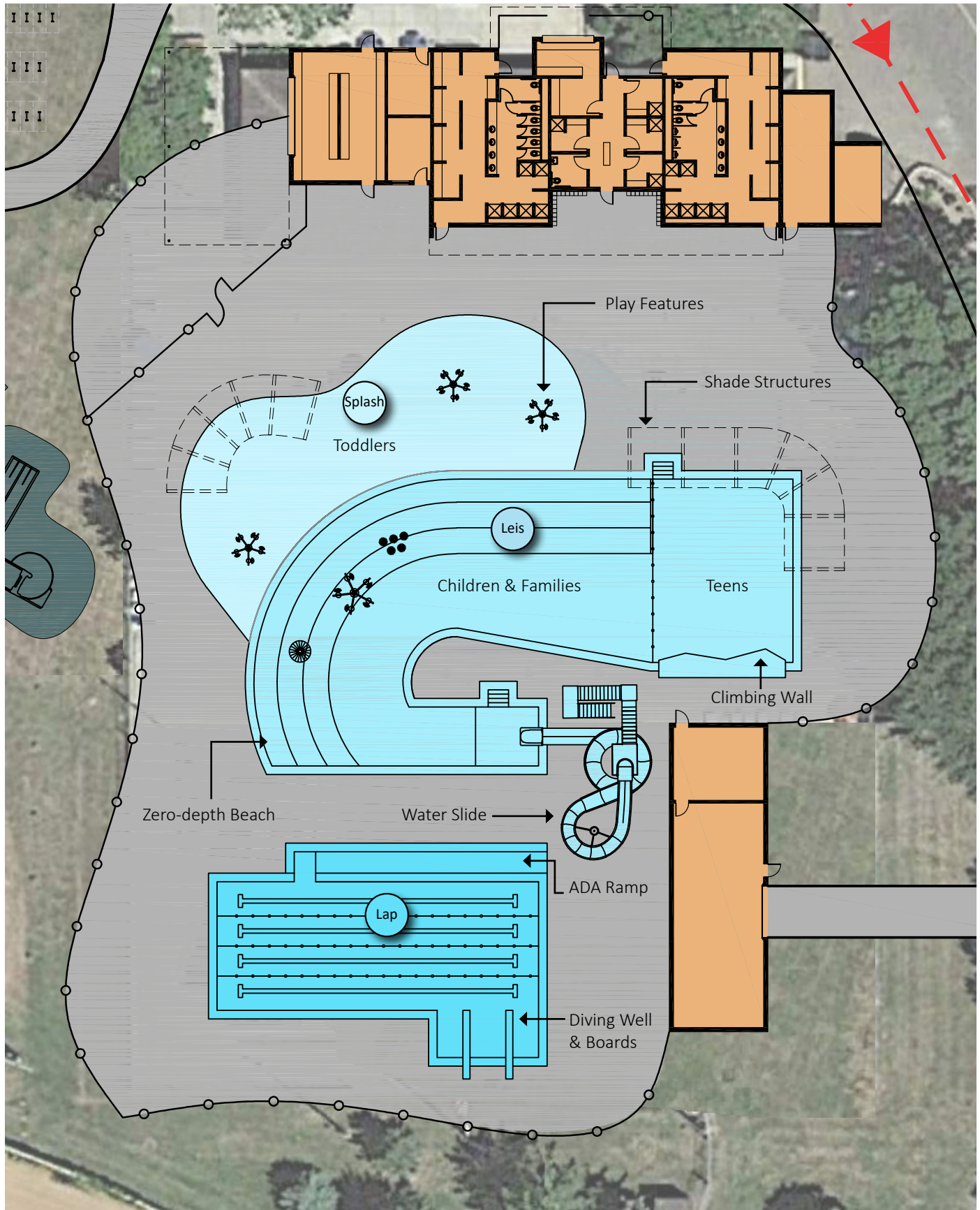
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The family changing area includes individual changing rooms with showers, a common area with lockers, and toilet room.



CONCEPT PLANS

Pools



Splash

The splash pad is a dry area (no standing water) with shade structures and interactive play features that spray, dump or shoot water. The water is immediately drained from the surface. Splash pads are appropriate for all, including toddlers.



Leis

The leisure pool includes a zero-depth beach (a gradual deepening of the water) with interactive water features, shade structures, a slide and plunge pool, and a climbing wall. It includes areas for young children and families (zero-depth beach with play features) and teens (water slide and climbing wall).



Lap

The lap pool includes four, 75-yard long swimming lanes, a diving area with 1-meter and 3-meter diving boards, and an ADA ramp entry.



CONCEPT PLANS

Rendering



Bath house including concessions, office and changing areas.



Splash pad with water play features and no standing water



Pool equipment and mechanical space



Leisure pool with zero-depth beach entry, water play features, water slide and climbing wall



Lap pool (4-lanes) with diving well (3-meter and 1-meter boards)



COST ESTIMATE

DEMOLITION AND SITE PREPARATION		\$175,000
Includes demolition of existing pools, concrete deck slab, bath house and pool slide and other structures		
AQUATIC AREAS		\$3,300,000
Includes leisure pool, lap pool, splash pad, play structures and slides		
DRY AREAS		\$256,250
Includes concrete deck slab walks concessions seating area deck area and drainage system		
SITE IMPROVEMENTS		\$225,000
Landscaping, irrigation, and fencing (\$150,000) Shade Structures (\$75,000)		
BUILDING AREA		\$1,788,625
Bath House and Concessions Building (\$1,388,625) Pool Mechanical Building (\$400,000)		
Project Totals		\$5,744,875
CONTINGENCY	20%	\$1,148,975
SOFT COSTS	20%	\$1,148,975
FF&E, Architectural and Engineering Fees, Testing, Survey		
TOTAL PROJECT COSTS		\$8,042,825

