Kimley-Horn
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Irving, Texas
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July 28, 2008

Mr. Scott E. Penn, Project Manager
Parks and Community Services Department
City of Fort Worth
4200 South Freeway, Suite 2200
Fort Worth, Texas 76115-1499

RE: Citywide Aquatic Facility Master Plan

Dear Scott:

Attached is the Final Draft # 3 incorporating the City's final review comments of the **Citywide Aquatic Facility Master Plan.**

On behalf of the Kimley-Horn and Counsilman-Hunsaker team, we would like to thank you and the rest of the City of Fort PACS staff for the opportunity to work on this exciting project for the citizens of Fort Worth, Texas.

With the initial funding of the pilot projects, Fort Worth has the opportunity to create an outstanding updated system of aquatic facilities for the community for recreation, exercise, and learn-to-swim programs.

We will provide the ten (10) copies of the completed plan report upon your authorization to proceed with printing.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.

Mark C. Hatchel, RLA, ASLA
Vice-President and Senior Park Planner

TEL 214 420 5600
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City of Fort Worth, Texas

Citywide Aquatic Facilities Master Plan

January 2008

Prepared by:
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Need for an Aquatic Master Plan

The City of Fort Worth, Texas, is the 17th largest city in the United States and offers a unique blend of the Old West with an award-winning cosmopolitan downtown area. As one of nine large cities named *America's Most Livable Communities of the Decade*, Fort Worth was selected as an attractive place to live, work, play, visit, retire, raise a family, attend a university, grow a business, and promote diversity. This honor is due to Fort Worth's vision to improve the quality of life for its citizens, its willingness to change and prepare for the future, while pursuing today's creative economic agenda. [1]

Recreation venues in Fort Worth include the Fort Worth Zoo, Texas Motor Speedway, the Historic Stockyards, art museums, rodeos, parks and lakes. The City of Fort Worth Parks and Community Services Department (PACSD) offers 246 parks, 175 athletic fields, 98 tennis courts, 22 botanical gardens, 20 community centers, 6 golf courses, Trinity Art Park Pavilion, and biking and nature trails.

With a long history for providing swimming pools, the City of Fort Worth currently owns and operates seven aquatic facilities: Forest Park (1922), Sycamore (1926), Marine (1926), Sylvania (1936), Lake Como (1957), Kellis (1960), and Hillside (1960). The existing pools are facing physical and functional obsolescence that is not unusual for pools 47 to 85-years old; thus, the city would like to provide residents with new up-to-date aquatic facilities more aligned with the current needs of the city.

As identified in public meetings, residents see a need for aquatic facilities in underserved areas. The existing pools are clustered in the center of the city and do not serve areas to the north, south, east and west where the city has grown. Residents in the center of the city see a need for newer aquatic facilities that would remain accessible to older neighborhoods in the community. Moreover, multi-generational aquatic centers have opened in several adjacent cities that provide state-of-the-art family aquatic experiences with multiple bodies of water, stimulating attractions, concession areas and shade structures. Many Fort Worth residents are traveling outside the city to enjoy this type of aquatic experience.

Additionally, the local competitive swimming community was represented at public meetings. The North Texas Local Swimming Committee (LSC) includes 27 teams with 4,495 swimmers in the immediate area of Fort Worth, Keller,

Mansfield, Dallas, and Grapevine, to name a few. Competitive swimming representatives, including Ron Forest, head coach of FAST, Fort Worth's USA Swimming Team, and U.S. Olympic swimmer Dana Vollmer, noted the need for an indoor 50 meter pool. There is a concurrent study for a pool in Crowley ISD, with which the city is partnering. The City of Fort Worth encompasses 17 Independent School Districts, and will look for partnership opportunities with each to offer competitive aquatic facilities, including Northwest ISD. The City of Fort Worth is also working with the YMCA on a project in north Fort Worth (off Beach Street). Phase I of this facility will be approximately 26,000 square feet with plans for expansion of an indoor gymnasium and natatorium. The dates are open ended, depending on future funding sources. Construction schedule: March 1, 2008 – December 1, 2008.

U.S. Census demographic analysis shows the City of Fort Worth's population base was 534,700 in the year 2000. Today, the population base is estimated at 635,800 and projected to grow to 704,500 by 2012. The city is considered young with a median age of 32.2 when compared to the national average of 36.4. Approximately 180,469 children under 18-years of age reside within the city limits. Median household income is estimated at $43,366.

It is the goal of the City of Fort Worth to create attractive facilities that will be useful for all residents, thereby generating repeat visits. The following "toolbox" of concepts with varying degrees of amenities has been developed for the city to consider.

Element A: Neighborhood Family Aquatic Center (NFAC)

$3,500,000

- 5,467 Sq. Ft. Outdoor Leisure Pool with 3 Lap Lanes
- Zero-Beach Entry
- One waterslide
- Participatory Play Feature
- Otter Slide
- 700 Sq. Ft. Tot Pool w/ Slide
- Bathhouse and 5 Shade Structures
- UV Sanitizer

Element B: Medium Family Aquatic Center (MFAC)

$ 6,500,000

- 6-Lane 25 Yard Outdoor Pool
- 2 Diving Boards
- 9,200 Sq. Ft. Outdoor Leisure Pool
- Zero-Beach Entry
- Two Waterslides
- Participatory Play Feature
- Tumble Buckets
- Otter Slide
- Current River
- 700 Sq. Ft. Tot Pool w/ Slide
- Bathhouse and 8 Shade Structures

Element C: Large Family Aquatic Center (LFAC)

$13,200,000

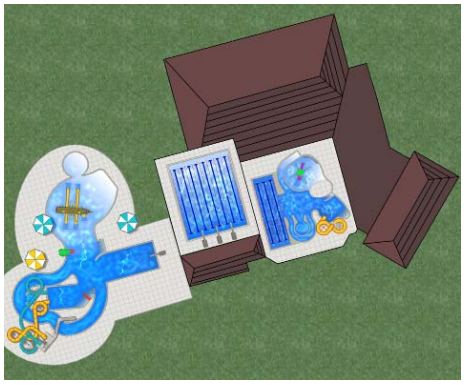
- 50 Meter Outdoor Competition Pool
- 2 Diving Boards
- 2 Bulkheads
- 800 Spectator Seats
- 13,300 Sq. Ft. Outdoor Leisure Pool (Heated)
- Zero-Beach Entry
- Water playground
- Two Waterslides
- Participatory Play Feature
- Current River
- 2,000 Sq. Ft. Tot Pool w/ Slide and Spray Feature

- Group Pavilion
- Bathhouse and 12 Shade Structures
- UV Sanitizer

Element D: Community Center Bundled Indoor/Outdoor (CC)

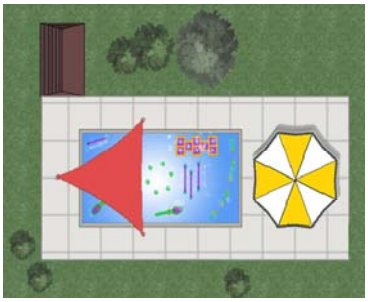
$16,100,000

- 8-Lane 25 Yard Indoor Competition Pool
- 2 Diving Boards
- 125 Spectator Seats
- 5,800 Sq. Ft. Indoor Leisure Therapy Pool
- Current Channel
- Vortex
- Waterslide
- Indoor Spa
- 9,200 Sq. Ft. Outdoor Leisure Pool
- 2 Waterslides
- Otter Slide
- Participatory Play Feature
- Current River
- Tumble Buckets
- 700 Sq. Ft. Tot Pool w/ Slide
- Bathhouse and 6 Shade Structures



Element E: Water Sprayground (Pad)

$800,000



- 2,100 Sq. Ft. Sprayground
- Multiple Spray Features
- Pool Deck
- 3 Shade Structures
- Pool Mechanical Enclosure
- Fencing & Lighting
- UV Sanitizer

Element F: Indoor 50 Meter Pool (50 M)

$16,100,000

- Indoor 50 Meter Competition Pool
- 900 Spectator Seats
- Moveable Floor
- 2 Bulkheads
- Springboard Diving

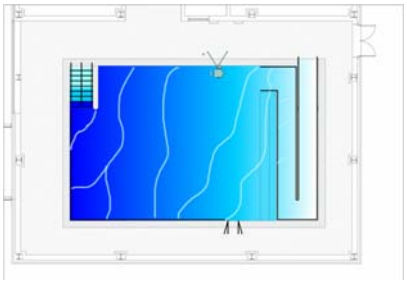
Element G: Destination Facility (Destination)

$14,400,000

- Leisure Pool
- Body Waterslide
- Tube Waterslide
- Matt Racer
- Otter Slide
- Tumble Buckets
- Play Feature
- Lazy River
- FlowRider
- Tot Pool
- Participatory Play Feature
- 8 Shade Structures

Element H: Indoor Therapy Pool (Therapy)

$1,300,000



- 1,650 Sq. Ft. Natatorium
- 600 Sq. Ft. Indoor Therapy Pool
- Locker Rooms

In the following table, *Revenue* is generated from attendance potential (determined from facility capacity limits and market penetration levels) with attendance revenue (determined from membership structures and per capita revenues). *Expense* is an estimate of operating expenses concentrating on site-specific rates for operations and maintenance, staffing pay structures, and commodities such as chemicals and operating supplies. *Recapture Rate* is used to define the percentage of operating expenses recuperated by operating revenue. The current recapture rate for the existing pools is 6% to 36%. It is common for municipalities to judge facility performance using the recapture rate as a benchmark, aiming for a high percentage of recapture.

[1]http://www.mostlivable.org
[2]http://www.nrpa.org

Opinion of Financial Performance

	2008	2009	2010	2011	2012
Element A					
NFAC					
Project Cost	$3,500,000				
Attendance	33,091				
Revenue	$85,629	$89,310	$93,059	$96,876	$100,761
Expense	$181,929	$186,478	$191,140	$195,918	$200,816
Operating Cashflow	(96,300)	(97,168)	(98,081)	(99,042)	(100,055)
Recapture Rate	**47%**	**48%**	**49%**	**49%**	**50%**
Capital Replacement	17,500	17,500	17,500	17,500	17,500
Debt Service	(305,146)	(305,146)	(305,146)	(305,146)	(305,146)
Cashflow	(418,946)	(419,814)	(420,727)	(421,688)	(422,701)
Element B					
MFAC					
Project Cost	$6,500,000				
Attendance	71,104				
Revenue	$217,364	$226,528	$235,859	$245,356	$255,019
Expense	$337,891	$346,338	$354,997	$363,871	$372,968
Operating Cashflow	(120,527)	(119,810)	(119,137)	(118,515)	(117,949)
Recapture Rate	**64%**	**65%**	**66%**	**67%**	**68%**
Capital Replacement	32,500	32,500	32,500	32,500	32,500
Debt Service	(566,700)	(566,700)	(566,700)	(566,700)	(566,700)
Cashflow	(719,727)	(719,009)	(718,337)	(717,715)	(717,149)
Element C					
LFAC					
Project Cost	$13,200,000				
Attendance	125,484				
Revenue	$610,170	$632,665	$655,511	$678,708	$702,257
Expense	$755,635	$774,526	$793,889	$813,737	$834,080
Operating Cashflow	(145,465)	(141,861)	(138,379)	(135,029)	(131,823)
Recapture Rate	**81%**	**82%**	**83%**	**83%**	**84%**
Capital Replacement	66,000	66,000	66,000	66,000	66,000
Debt Service	(1,150,836)	(1,150,836)	(1,150,836)	(1,150,836)	(1,150,836)
Cashflow	(1,362,301)	(1,358,698)	(1,355,215)	(1,351,865)	(1,348,660)
Element D					
CC					
Project Cost	$16,100,000				
Attendance	115,275				
Revenue	$654,519	$678,162	$702,228	$726,717	$751,629
Expense	$1,026,761	$1,052,430	$1,078,741	$1,105,709	$1,133,352
Operating Cashflow	(372,242)	(374,268)	(376,512)	(378,992)	(381,723)
Recapture Rate	**64%**	**64%**	**65%**	**66%**	**66%**
Capital Replacement	80,500	80,500	80,500	80,500	80,500
Debt Service	(1,403,671)	(1,403,671)	(1,403,671)	(1,403,671)	(1,403,671)
Cashflow	(1,856,414)	(1,858,439)	(1,860,684)	(1,863,163)	(1,865,894)

	2008	2009	2010	2011	2012
Element E					
Pad					
Project Cost	$800,000				
Attendance	16,157				
Revenue	$0	$0	$0	$0	$0
Expense	$29,555	$30,294	$31,052	$31,828	$32,624
Operating Cashflow	(29,555)	(30,294)	(31,052)	(31,828)	(32,624)
Recapture Rate	**0%**	**0%**	**0%**	**0%**	**0%**
Capital Replacement	4,000	4,000	4,000	4,000	4,000
Debt Service	(69,748)	(69,748)	(69,748)	(69,748)	(69,748)
Cashflow	(103,303)	(104,042)	(104,799)	(105,575)	(106,371)
Element F					
50 M					
Project Cost	$16,100,000				
Attendance	80,926				
Revenue	$627,826	$643,809	$660,053	$676,558	$693,324
Expense	$958,987	$982,961	$1,007,535	$1,032,724	$1,058,542
Operating Cashflow	(331,161)	(339,153)	(347,482)	(356,166)	(365,218)
Recapture Rate	**65%**	**65%**	**66%**	**66%**	**65%**
Capital Replacement	80,500	80,500	80,500	80,500	80,500
Debt Service	(1,403,671)	(1,403,671)	(1,403,671)	(1,403,671)	(1,403,671)
Cashflow	(1,815,332)	(1,823,324)	(1,831,654)	(1,840,337)	(1,849,389)
	2008	2009	2010	2011	2012
Element G					
Destination					
Project Cost	$14,400,000				
Attendance	139,426				
Revenue	$919,975	$957,086	$994,776	$1,033,046	$1,071,896
Expense	$858,540	$880,003	$902,003	$924,553	$947,667
Operating Cashflow	61,435	77,083	92,773	108,493	124,229
Recapture Rate	**107%**	**109%**	**110%**	**112%**	**113%**
Capital Replacement	72,000	72,000	72,000	72,000	72,000
Debt Service	(1,255,458)	(1,255,458)	(1,255,458)	(1,255,458)	(1,255,458)
Cashflow	(1,266,023)	(1,250,375)	(1,234,685)	(1,218,964)	(1,203,229)
Element H					
Therapy					
Project Cost	$1,300,000				
Attendance	7,756				
Revenue	$33,348	$34,027	$34,719	$35,423	$36,141
Expense	$143,577	$147,166	$150,845	$154,616	$158,482
Operating Cashflow	(110,228)	(113,139)	(116,126)	(119,193)	(122,341)
Recapture Rate	**23%**	**23%**	**23%**	**23%**	**23%**
Capital Replacement	6,500	6,500	6,500	6,500	6,500
Debt Service	(113,340)	(113,340)	(113,340)	(113,340)	(113,340)
Cashflow	(230,068)	(232,979)	(235,966)	(239,033)	(242,181)

Source: Counsilman-Hunsaker

Section 1: Introduction

Background

The City of Fort Worth owns and operates seven aquatic facilities in need of major investment. In 2006, Parks and Community Services Department (PACSD) informed City Council that the city pools were reaching maximum life as seen in system-wide major infrastructure failings coupled with escalating costs of repairs. City Council directed staff to develop a Citywide Aquatic Facilities Master Plan, which entailed securing the services of a consultant while continuing to operate the existing facilities and constructing a pilot splash pad (design in progress at Sycamore Park).

The PACSD retained Kimley-Horn and Counsilman-Hunsaker for the consulting team to prepare this Citywide Aquatic Facilities Master Plan to provide direction to the city. The consulting team completed a separate audit of the existing pools with repair recommendations. The Citywide Aquatic Facilities Master Plan provides recommendations for new aquatic facilities with operational cost analysis.

Project Scope

The scope of the project is to:

- Recommend aquatic facilities that meet current and future community needs for safety, health, amenities, program operations, capacity and locations.
- Make projections regarding need, project costs, operating costs and customer demand.
- Establish priorities for the implementation of strategies for the future of Fort Worth aquatics.

Methodology

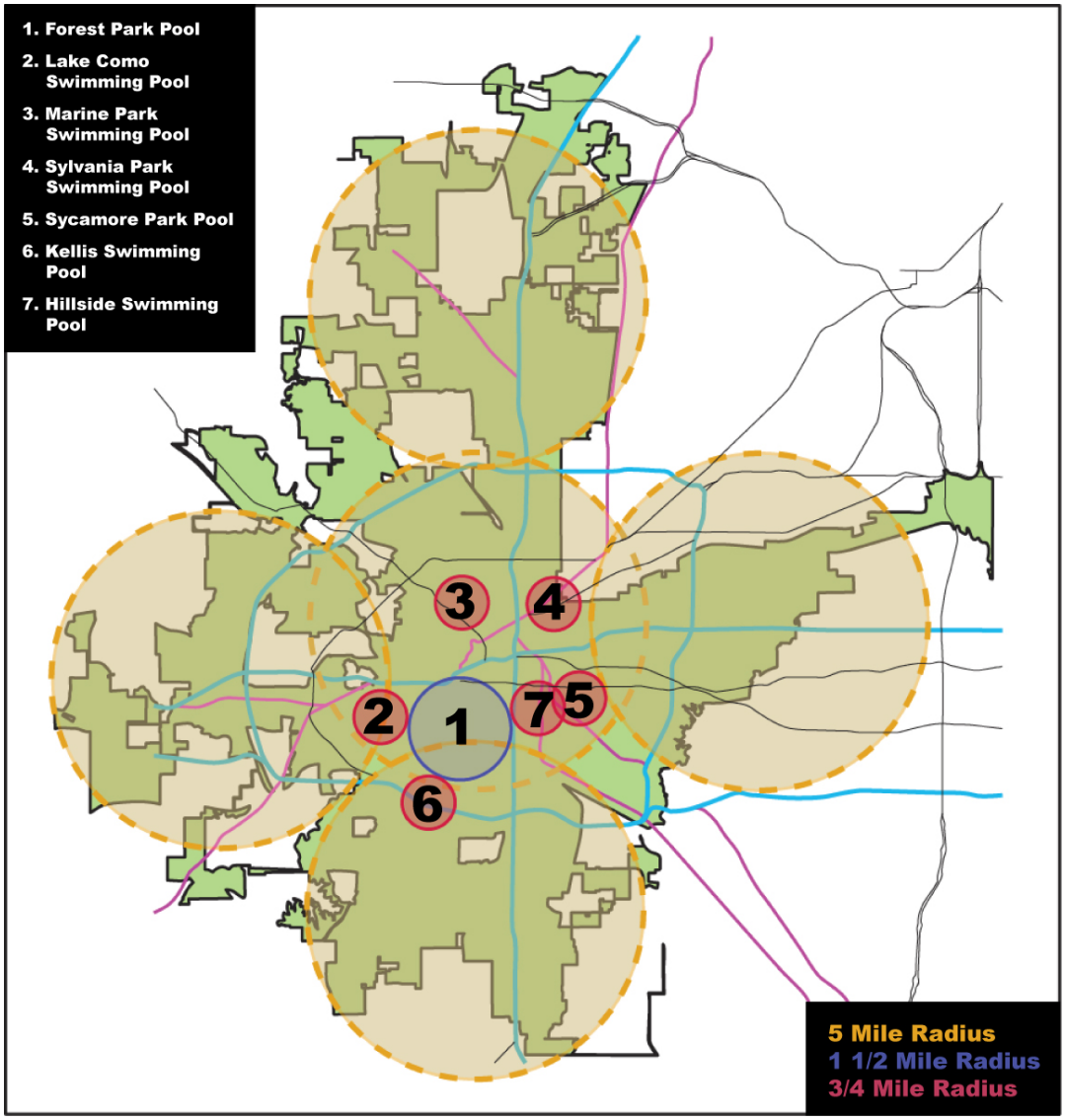
The preparation of the Citywide Aquatic Facilities Master Plan involved community participation and background research through the following processes:

1. Identified the needs of the city through community focus groups and staff and stakeholder interviews.
2. Developed an opinion of potential user groups by analyzing the target market area using the focus groups and demographic data.
3. Observed and recorded similar aquatic centers within and around Fort Worth to understand the programs, operations and fees of those facilities.
4. Prepared recommendations for an aquatic strategy.

Existing Pools

This section describes the current conditions of the facilities managed and operated by the City of Fort Worth PACSD.

Map 1
City of Fort Worth Pools



Source: City of Fort Worth

The map illustrates orange circles (each with a 5 mile radius) of served and underserved areas of the city with the city's existing pools in the center of the city. The blue circle represents the largest pool, Forest Park Pool, with a 1.5 mile radius. The red circles represent the other six smaller pools, each with a ¾ mile radius. The youngest pool is 47-years old; the oldest pool is 85-years old. The pools have undergone major renovations throughout the years. Recent growth areas (city sprawling) do not have municipal aquatic facilities.

1. Forest Park Pool

2850 Park Place

- Estimated surface area: 19,110 square feet
- Estimated volume: 750,000 gallons
- Built in 1922 – no filtration
- Renovated in 1967 – added filtration system
- Renovated in 1991 – zero depth entry, PVC liner, new filtration

Attendance	35,408
Revenue	$56,239
Expense	189,706
Operating Cashflow	(133,467)
Recapture Rate	**30%**

2. Lake Como Swimming Pool

401 Lake Como Drive

- Estimated surface area: 4,340 square feet
- Estimated volume: 154,000 gallons
- Built in 1957
- Renovated in 1994 – depth reduced to 8ft. from 12ft.

Attendance	1,957
Revenue	$2,656
Expense	$41,267
Operating Cashflow	(38,611)
Recapture Rate	**6%**

3. Marine Park Swimming Pool

303 NW 20th Street

- Estimated surface area: 13,328 square feet
- Estimated volume: 500,000 gallons
- Built in 1926 – no filtration
- Renovated in 1983 – added filtration system, reduced depth

Attendance	11,810
Revenue	$16,767
Expense	$50,195
Operating Cashflow	(33,428)
Recapture Rate	**33%**

4. Sylvania Park Swimming Pool

3801 Maurice Ave.

- Estimated surface area: 13,080 square feet
- Estimated volume: 445,000 gallons
- Built in 1936 – no filtration
- Renovated in 1983 – added filtration system, reduced depth

Attendance		12,357
	Revenue	$18,182
	Expense	$50,195
	Operating Cashflow	(32,013)
	Recapture Rate	**36%**

5. Sycamore Park Pool

1000 Beach Street

- Estimated surface area: 13,606 square feet
- Estimated volume: 406,000 gallons
  Built in 1926 – no filtration
- Renovated in 1982 – added filtration system, reduced depth
- Renovated in 1999 – epoxy paint finish

Attendance		8,672
	Revenue	$5,414
	Expense	$50,195
	Operating Cashflow	(44,781)
	Recapture Rate	**11%**

6. Kellis Swimming Pool

4651 S Ridge Ter.

- Estimated surface area: 2,940 square feet
- Estimated volume:124,000 gallons
- Built in 1960 – no filtration
- Renovated– added filtration system, new deck

Attendance		3,959
	Revenue	$6,526
	Expense	$41,267
	Operating Cashflow	(34,741)
	Recapture Rate	**16%**

7. Hillside Swimming Pool
1201 E Maddox

- Estimated surface area: 2,370 square feet
- Estimated volume: 94,000 gallons
- Built in 1960
- Renovated in 1994 – new filtration system, new deck, new bathhouse

Attendance		4,494
	Revenue	$2,388
	Expense	$41,267
	Operating Cashflow	(38,879)
	Recapture Rate	**6%**

Comparison Cities

In 1990 the National Recreation and Parks Association published a recommendation for the number of public pools needed in any U.S. community based on population alone: one pool for every 20,000 population. Although this never became the national standard due to variables such as other providers, income, different types of pools, and desired programming by various age groups, the following chart shows the number of public pools from various cities across the U.S. From these cities it was found that, on average, the U.S. has approximately one public pool for every 46,000 people. Pools range from one pool for every 15,000 people in Austin, TX, to San Jose, CA, which has one pool for every 456,000 people. In developing the strategy, analyzing a comparison to other cities reveals that Fort Worth has one pool for approximately every 91,000 residents.

Pools by Population (2007 US census estimate)

City	Population	Municipal Pools	People Served
Houston, TX	2,106,582	39	54,015
Phoenix, AZ	1,461,575	29	50,399
San Antonio, TX	1,256,509	25	50,260
San Diego, CA	1,255,540	13	96,580
Dallas, TX	1,213,825	22	55,174
San José, CA	912,332	2	456,166
Tulsa, OK	803,235	18	44,624
Jacksonville, FL	782,623	34	23,018
San Francisco, CA	739,426	9	82,158
Austin, TX	690,252	47	14,686
Fort Worth, TX	635,800	7	90,829
Kansas City, MO	447,306	9	49,701
Sacramento, CA	407,018	15	27,135
Colorado Springs, CO	360,890	6	60,148
Raleigh, NC	339,500	8	42,438
Laredo, TX	216,912	6	36,152
Lubbock, TX	210,039	4	52,510
Shreveport, LA	199,370	9	22,152
Spokane, WA	197,520	5	39,504
Irving, TX	193,571	7	27,653
Salt Lake City, UT	178,238	2	89,119
Salem, OR	150,361	2	75,181
Grand Prairie, TX	150,000	4	37,500
Eugene, OR	145,981	3	48,660
Hampton, VA	145,646	7	20,807
Torrance, CA	145,516	1	145,516
Independence, MO	109,159	1	109,159
AVERAGE	**15,454,726**	**334**	**46,272**

Source: Counsilman-Hunsaker

The present Fort Worth aquatics system has been adequately maintained over the years. The filtration and mechanical systems vital to these pools' operations have been upgraded where necessary and continue to perform within the limits of current aquatic regulatory standards, but each, nevertheless, remain outmoded in terms of energy efficiency. The locations of the municipal pools correspond to the city's population distribution and patterns of growth prevalent at the time of their construction and thus do not provide an aquatic experience to newer growth areas of the city. Given the generic design of the pools, a relatively narrow range of specialized aquatic needs are satisfied. Just as these pools are the product of an earlier era of aquatic design standards, so too are the amenities and support facilities that serve these pools. Although well-maintained, they do not fully comply with provisions of the Americans with Disabilities Act. This Aquatic Master Plan thereby encompasses a contemporary aquatic program system with locations, capacity, provisions and amenities in concert with the growing needs of the City of Fort Worth.

Municipalities are shifting emphasis from facilities designed specifically for competitive swimming to considering the entire community's needs. The old theory of building a rectangular pool and expecting everyone to use the same pool is unrealistic for tiny tots, families, the disabled, and seniors. Often, multiple bodies of water are necessary to accommodate greater representation from the community, thus resulting in family aquatic centers with enhanced recreation facilities, wellness programming, and traditional swimming.

The renaissance of bundling leisure, therapy, and competitive components creates hybrid aquatic centers that provide bodies of water with separate spaces appropriate for various groups. Modified temperatures and depths enable programming to include swim lessons, competitive swimming, aquatic therapy, water fitness activities, and family leisure fun – simultaneously. These aquatic centers are fully ADA accessible where everyone can benefit from aquatic activities. As more athletes cross train with water fitness components and more doctors recommend water rehabilitation for injured, obese, diabetic, and aging patients, multi-generational aquatic centers are inclusive of the entire community.

Potential User Groups

National surveys show that swimming ranks as a favorite leisure sport. Park and recreation aquatic centers include countless opportunities for physical activity, including swim lessons, swim teams, aquatic therapy and water fitness activities that need not be too challenging to be beneficial.

Participation Statistics (in millions)

	2006
Walking	87.5
Swimming	56.5
Exercise w/Equipment	52.4
Bicycle Riding	35.6
Aerobics	33.7
Weight Lifting	32.9
Running/Jogging	28.8
Basketball	26.7
Golf	24.4
Baseball	14.6
Soccer	14.0
Volleyball	11.1
Tennis	10.4

Source: National Sporting Goods Association

Note: In communities with aging or non-existent pools – aquatic recreation consistently is ranked in the top five most desired experiences in community-wide recreation plans.

User groups can be categorized by Lessons, Fitness, Therapy, Recreation and Competitive.

Swim Lessons

Public health policies typically stress strategies that educate the public about hazards of open bodies of water, promote swimming and water safety classes, and encourage CPR training for children and teenagers. A well-run public swim lesson program trains children in safe swimming techniques that are vital to the health and safety of the community.

Fitness

Water aerobic programs have become one of the fastest growing segments of the adult fitness industry. Its qualities of buoyancy and warm temperatures have many benefits for athletes recovering from injuries as well as healthy adults seeking a less stressful, low or no-impact form of exercise. Classes include water pump workouts, working with foam water weights, water-proof plastic weights, water walking, aqua aerobics, and various arthritis exercises.

Competition

Competitive athletes (USA Swimming, USA Diving, US Masters Swim Teams, summer swim and dive teams, high school swim and dive teams, water polo teams, etc.) are loyal and appreciative groups, and, if their needs are met, can be counted upon to provide a steady stream of income.

Recreation

Recreational swimmers have evolved to expect a variety of activities and features since the advent of water parks in the 1970's. Providing a more "waterpark-like" experience will generate the necessary repeat visits to help pay operating costs, and recreational users are willing to pay more per visit if their expectations are met. The ultimate test of design is the choreography of people, perception of the facility, and repeat visits.

Therapy

Aquatic therapy requires a very controlled environment. Water temperature is usually between 87 - 92 degrees Fahrenheit. Water depths range from three feet six inches to over six feet, depending on the type of treatment. The term aquatic therapy has been applied to a variety of health-oriented aquatic programs for arthritis, obesity, surgery recovery, athletic injuries, etc. In order to maximize revenue potential and health benefits to the community, programming needs to concentrate on therapy associated with a medical provider.

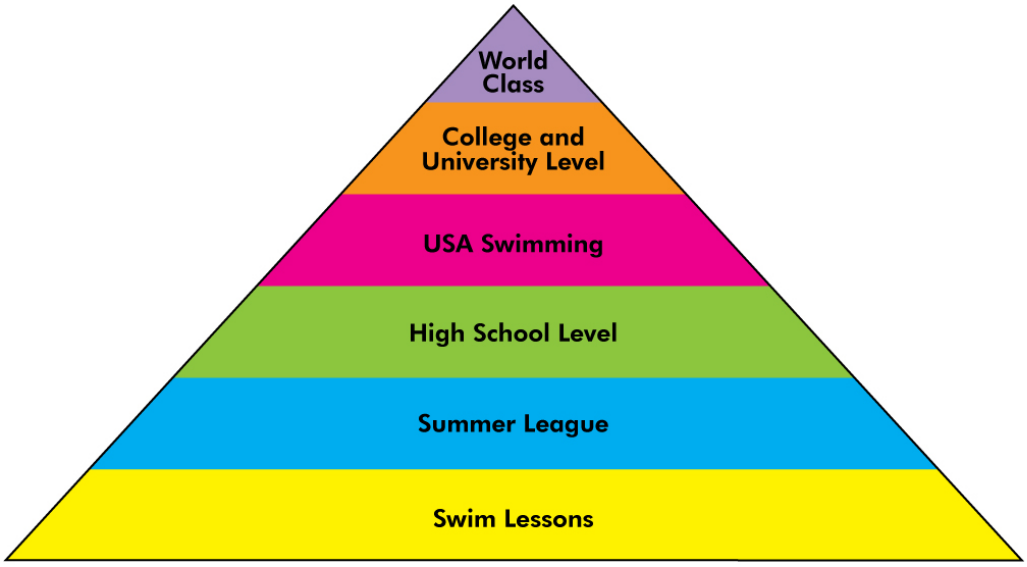
Specific User Groups – Lessons and Fitness

Swim Lessons

In 2004, there were 3,308 unintentional fatal drownings in the United States, averaging nine people per day. This figure does not include the 676 fatalities from drowning and other causes, due to boating-related incidents. For every child 14 years and younger who died from drowning in 2004, five received emergency department care for nonfatal submersion injuries. More than half of these children were hospitalized or transferred to another facility for treatment. Nonfatal drownings can cause brain damage that result in long-term disabilities ranging from memory problems and learning disabilities to the permanent loss of basic functioning (i.e., permanent vegetative state). [3]

Knowing how to avoid drowning is essential for children and adults alike, whether living in areas with natural bodies of water or simply being invited to pool parties. Teaching many different people swimming skills at one time may be a challenge. With more than one available water body in an aquatic center, lessons can be maximized to the point where a large number of residents can be taught. Ideally, water depth for instruction should be such that young participants can stand comfortably in the water. Leisure pools easily accommodate this preference. Deeper competition pools can provide moveable floors or other means of altering water depth for instructional purposes. Water depths for aerobic exercise vary from waist deep to deeper waters for water treading workouts.

A well-run water lesson program is an important ingredient in introducing young swimmers to safe aquatic skills that will be used during their lifetimes. By offering the community youth a comfortable, controlled aquatic environment, swimming and diving lessons can become an enjoyable experience. There are many different types of water safety lessons that can teach children not only how to swim and dive but how to survive in adverse water conditions. From small water craft instruction to drown-proofing to lifeguarding to surf lessons that help ensure safe water experiences, water safety lessons are an integral part of any community.



The swim program is also the base of a triangle for the athlete. Hundreds of children will be trained in safe swimming techniques. Many will go on to formal competitive aquatic programs in school or age-group swimming programs. Some will excel to become state champions. Benefits, such as scholarship offers, may occur when a swimmer or diver selects a college, which could lead him or her to national level competition.

Drown-Proofing

There are many different means and methods to teach proper drown-proofing. Some mimic the natural environment through instructor creativity (examples include creating wave action with hands and arms to mimic river tides), while others simply require small children to memorize what they would do in a situation where drowning is likely, and then enact those memorized skills in the safety of a swimming pool with an instructor present. Whatever the case, knowing how to avoid drowning is essential for children and adults alike, especially those living in areas where natural water bodies are prevalent.

Lifeguarding and CPR

Water rescue skills are typically taught to all lifeguards, as is CPR. However, these skills are essential for anyone who wishes to rescue a drowning victim. Teaching water rescue and CPR skills should be offered to the community as families are the true lifeguards of each other, whether at the beach or a pool. Often, such courses are sponsored or offered by NASCO, the Red Cross and/or other American providers of safety training.

Water Craft Instruction

Water crafts may capsize and experience other mechanical difficulties. Drowning often occurs when non-swimmers are aboard a craft that experiences difficulties of a mechanical or climatological nature. Though most aquatic centers, because of size constraints, cannot offer small water craft instruction courses, large indoor and outdoor 50 meter pools can and do provide excellent means to teach those seeking to perfect their water safety skills in the event of an emergency.

School District Lesson Users

School districts are often valuable contributors to efficiently programming aquatic facilities, and in some communities curricular and extracurricular aquatics can play a vital role in that goal. Potential programming might embrace swim lessons for elementary students, lifeguarding classes, physical education classes, therapy for high school athletes, and other joint partnership agreements to aid in directing all area children to the facility to learn to swim. During school hours, programming activities is one of the biggest challenges of indoor aquatic facilities, and aquatic sports such as water polo, synchronized swimming, underwater hockey, etc., can contribute to the overall use of the facility. Other uses might include fitness use by faculty, special education therapy, and

recreation. In addition, an aquatic facility may provide aquatic opportunities to pre-school children cared for by private daycare providers.

Aquatic Fitness

The industry has responded to the continued popularity of aquatic fitness by creating a wide range of activities with related devices and equipment for a greater diversity of water-based aqua exercise options. Aerobic dancing, walking and running in shallow and deep-water environments, including current channels for walking against the current, are just a few of the choices available to people wishing to add less stressful elements of a cross-training regimen or even use aqua aerobics for their entire fitness program. Moreover, businesses may sponsor or subsidize aquatic fitness as part of their employee wellness training discipline. Though some large corporations have their own facilities, most do not.

Aquatic fitness also remains one of the most popular forms of exercise among senior adults. Data taken from the U.S. Census Bureau shows lifetime expectancy is up 30 years since 1900, increasing by approximately 2.7 years every decade. The older adult market now spans some four generations from the Depression Era 1900-1939, Silent Gens 1940-1945, Mature Boomers 1946-1958, to Young Boomers 1951-1957. Gray power can be a large, affluent market willing to participate in water aerobics programming, wellness programming and other recreational opportunities. Although this diverse group from 55 to 80+ includes sub-groups with some still working, some have children in college, and some are focusing on retirement, grandkids, and health. Consequently, seniors can be willing, enthusiastic participants provided certain requirements are met. They typically feel uncomfortable in an environment with teens and generally respond better to programming that is strictly defined with definite starting and finishing times of well-structured activities such as water aerobics, arthritis water fitness, water walking, physical therapy, adult swim lessons, save a life workshops, lap swimming, Masters swimming, and water volleyball.

Year	Male	Female
1900	48.2	51.1
1940	60.8	65.2
1950	65.6	71.1
1960	66.6	73.3
1970	67.1	74.7
1980	70.0	77.4
1990	71.8	78.8
2000	74.3	79.7

Water Fitness Trends

Aquatic programming accommodates beginner lessons that graduate to higher levels of intensity and skill. The following provides a snapshot of fitness programs that remain popular.

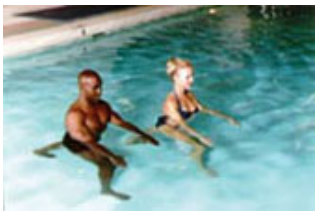
Walking and Jogging in Shallow and Deep Water: 30 minutes of aqua jogging is equal to 80 minutes of jogging on land (www.waterart.org). Many people enjoy walking/jogging against the current in current channels and lazy rivers.

Finning: Requires training fins or flippers and utilizes fitness lap lanes of a pool. The kicking and pulling enhances conditioning and toning.

The Liquid Gym: An aqua training workout that can be as intense as desired.

Navy Seals: Much like The Liquid Gym, but geared for younger swimmers.

Water Yoga: Warm water, as in a therapy pool, enhances the effects of asanas (stretching poses) to relax muscles and increase range of motion and balance. Pan flute music and dim lights deepen the experience. yogaafloat.com.



Water Aerobics: Remains one of the fastest growing segments of the adult fitness industry. Fat is burned at a higher percentage than land aerobics.

Water Weight Workouts: A workout with foam water weights or water-proof plastic weights in the water.

Deep H2O Training: A muscular endurance workout in deep water.

Basic Training and Boot Camp: Amphibious program incorporates land and water fitness to add variety to training regimens.

Scuba and Snorkeling: These lessons are growing and typically start in pools.

Scuba Rangers for kids (8-12) teaches snorkeling and scuba diving skills while using underwater flash lights, navigation compasses and underwater photography.

Underwater Hockey: Fast moving "no contact" sport played on the bottom of a pool by two teams of six. Players wear fins, mask, snorkel, a protective glove and headgear. The stick is short, approximately 1 foot long, the puck is around 3 lb., and the goal is 9' long. Scoring depends on teamwork as players must go to the surface to take breaths. Games are two 15 minute halves and can have up to 4 substitutes who can enter on the fly.

Triathlons: Increasing as aquatics are playing a major role in competitions.

Kayak and Canoe Clubs: Growing due to the popularity of Extreme Sports.

Aqua-lympics: Includes skills such as water volleyball, inner tube water polo, and the waterslide speed challenge, where participants are timed in their descents down the slide.

Aquatic Personal Training: Trainers design personalized aquatic programs to help participants achieve fitness goals.

Swim lessons, lap swimming, water jogging, deep-water aerobics, life saving instruction, diving lessons, survival swimming, synchronized swimming, water polo, underwater hockey and scuba instruction can take place in a competitive/lesson pool, which frees up the leisure pool for swimmers who want to use the waterslide and play features. Fitness classes are usually offered in the morning, at lunchtime and in the early evening. Organizations such as the Arthritis Foundation, Red Cross, Aquatic Exercise Association, American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD), and United States Water Fitness offer instructor information and/or training.

Specific User Groups - Aquatic Therapy

Aquatic therapy is rehabilitation performed in water and involves physical activity, exercise and motion in the presence of an aquatic therapist, sometimes referred to as an aquatic therapy provider. Warm water may increase the dynamics of blood pressure and blood and lymph circulation, as well as decreasing swelling in skin and other tissues.

Participation in an aquatics program is to improve overall health and fitness, to increase stretching capacity, range of motion, movement capabilities, coordination, physical stamina and endurance; to partake in cardiovascular exercise at the participant's target heart rate; to understand the concepts of a fitness program; and to improve swimming safety, skills and abilities.

Though many people who use aquatic therapy are enthusiasts of meditation or massage, some are looking for rehabilitation, improving or maintaining a certain level of health. The Arthritis Foundation certifies instructors to teach arthritis aquatics. Many participants in these programs report reduced arthritis symptoms, including increased mobility, reduced pain and decreased inflammation. New studies suggest that the management of diabetes can be facilitated by water exercise. Though still in the theoretical stages, studies suggest that water exercise and therapy, when applied to diabetics as a regular program, can reduce diabetes symptoms and assist insulin level management. When moderate exercise is recommended for obese patients, the low-gravity qualities of aquatic therapy can be very appealing to this user group.

The following are specific types of aquatic therapy:

Ai Chi

Ai Chi is a form of active aquatic therapy or fitness modeled after the principles of T'ai Chi and yogic breathing techniques. Ai Chi is normally provided in a hands-off manner (the teacher usually stands on the pool deck to verbally motivate visual imaging of complex patterns to the client). The client stands in chest-deep water and is verbally and visually instructed to perform a slow, rhythmic combination of therapeutic movements and deep breathing. Ai Chi is especially popular among meditation and martial arts enthusiasts.

Aquatic PNF

PNF (Proprioceptive Neuromuscular Facilitation) is a means of therapy based on functional human anatomy and neurophysiology that seeks to improve motor skill output in the therapy seeker. In aquatic PNF, the client or therapy seeker is verbally, visually, and/or tactilely instructed in a series of functional, spiral and diagonal mass movement patterns while standing, sitting, kneeling or lying in the water. The patterns can be performed actively or with assistance or resistance provided by specialized aquatic equipment. The goal is improved motor skills and maximizing flexion. Aquatic PNF is often sought by rehabilitation seekers who are more comfortable in the easy-on-your-joints environment that water can provide.

Bad Ragaz Ring Method

The Bad Ragaz Ring method is a form of active or passive aquatic therapy modeled after the principles and movements of the Knupfer and PNF methods. In many ways, it is similar to PNF except that the therapy seeker is supported by rings or floatation devices and is almost always positioned horizontally.

Fluid Moves® or Aquatic Feldenkrais®

Fluid Moves® is a form of active or passive therapy modeled after the Feldenkrais method. Fluid Moves® may be provided in a hands-on or hands-off manner by the provider. During active Fluid Moves, the student, while in a guided exploratory process, follows a sequence of movements based on the early developmental stages of the infant. The client stands chest deep in water, typically with his or her back to the pool wall, and is then instructed by the provider to perform a slow, rhythmic combination of therapeutic movements and deep breathing. This method is based on functional integration, and is especially popular among meditation enthusiasts.

Halliwick Method

The Halliwick method is meant to teach postural control and balance. It is almost always performed in a hands-on manner with the instructor tactilely controlling the client or therapy seeker. The client or therapy seeker is then destabilized by the therapy provider, who progresses the client through a series of activities that require sophisticated rotational control in an attempt to teach the client either to swim or control his or her movements. The therapy seeker is then required to react to, and eventually to predict, the demands of an unstable environment.

Swim Stroke Training and Modification

Swim stroke training and modification is a form of active aquatic therapy, which makes use of swim stroke techniques in an attempt to rehabilitate, not to teach swimming skills or promote swim stroke efficiency. Swim stroke training and modification may be provided in either a hands-on or hands-off technique depending on the provider. Typically, in this type of therapy, the client is horizontal and is verbally, visually, and/or tactilely instructed for the purpose of modifying and executing various swim strokes. Often times, in the case of healthy clients, water weights are used in Swim Stroke Training and Modification, thereby making this type of rehabilitation more challenging for individual muscle groups.

Task Type Training Approach

The Task-type training approach to aquatic therapy is, as are many techniques of aquatic therapy, an adaptation of existing therapeutic techniques applied to an aquatic setting. This method, abbreviated TTTA, was first described as a way to teach functional activities to therapy seekers who had suffered strokes. However, as the years progressed, TTTA has expanded its client base to include all patient disorders, but is especially prescribed in cases of neurological dysfunction. TTTA emphasizes functional skills to be performed by the therapy seeker in an aquatic environment. Some successful patients, clients or therapy seekers, will move beyond the aquatic environment and continue their task-oriented training on land.

Watsu®

Watsu® is a form of passive aquatic therapy modeled after the principles of Shiatsu (massage). Watsu is normally performed in a hands-on manner by the provider. The client is usually held or cradled by the provider (in warm water) while the aquatic therapy provider stabilizes or moves one segment of the body, resulting in the stretch of another segment due to "drag effect." The therapy seeker usually remains completely passive while the provider combines the qualities of an aquatic environment with rhythmic flow patterns. This type of therapy is typically not rehabilitative in nature, but is more designed for meditation enthusiasts.

Specific User Groups - Recreational Users

Municipal aquatic centers merge the best features of a public pool and the commercial water park by segregating creative water play areas for various age groups. They succeed in creating an adventurous ambience in a safe and friendly atmosphere with plentiful shade areas, inviting the entire community on a daily basis. While aquatic recreation has become much more age-defined, attractions have age limitations and appropriateness due to elements of thrill and capabilities. Separate spaces are created according to different water depths and suitable age-group amenities. Tots enjoy shallow pools with gentle water features and play areas, tucked securely out of the way of the more active areas.

Once children grow out of the tot stage, they can romp in zero-beach leisure pools and make their adventurous way across participatory play features with "just-their-size" waterslides. Older children speed down flume and drop slides and enjoy larger water play structures. Pre-teens race down mat racers while teens enjoy gathering spots like action islands with access to deep water pools and extreme features. Lazy rivers and current channels are for everyone while spas and lap lanes are geared for adults.

Recreational Age-GroupNational Trends

Age 0-3	Tot Pool, Tot Slides, Gentle Spray Features
Age 4-7	Water Sprayground, Zero-Beach Pool, Participatory Play Features, Sand Play
Age 8-11	Water Walks, Large Play Structures, Full-Size Waterslides, Open Water
Age 12-16	Water Walks, Large Waterslides, Open Water, Diving, Lazy River, Gathering Places, Sand Volleyball, Mat Racer
Age 17-22	Action Island, Swirl Slide, Flow Rider, Mat Racer, Climbing Wall, Open Water, Own Space, Sand Volleyball, Place to be Seen
Age 23-45	Zero-Beach Pool (w/children), Open Water, Spa, Sun Deck, Lap Lanes, Lazy River, Waterslides
Age 45+	Spa, Sun Deck, Lap Lanes, Lazy River

Source: Counsilman - Hunsaker

Leisure Pools

The free-form leisure pool provides an inviting atmosphere with plenty of shallow water from zero-beach to four feet, allowing adults and children to interact for hours of splash and play entertainment. With opportunity for many different sizes and designs, the leisure pool is a desirable amenity for all age and skill levels where various attractions may be incorporated to increase the experience factor, which increases attendance, the amount of time spent at the facility, and return visits.

Lap Lanes

Fitness lap swimming and water walking are important to many adults and seniors. Opportunities for limited practice and training exist in a two, three or four lane 25-yard lap pool adjacent to the leisure pool. Additionally, programming can be incorporated for lessons and activities.

Deep Water Diving

A flexible springboard in 1 meter or 3 meters secured at one end and projecting over deep water provides experienced swimmers the challenge of diving. Deep water can also be programmed for advanced swim lessons, lifeguard training, diving lessons, water safety, water polo, scuba, synchronized swimming lessons, and deep water fitness classes.

Participatory Play Features

Located within the shallow body of the leisure pool, participatory play features are multi-level, interactive structures where children can scamper through spraying water, climb across bridges, scurry over and under tunnels, and slide down just-their-size waterslides. As children manipulate valves and chains, they control where and when the water sprays will occur, all within sight of parents and lifeguards.

Zero-Beach Entry

Users enjoy easy access into leisure pools that simulate an ocean beach where the pool bottom slopes gradually toward the deeper water. Instead of jumping or climbing into the pool, patrons simply walk in. Lounging in the zero-beach is a pleasant way to enjoy the water while watching children play.

Lazy River

A lazy river meanders through an aquatic park whisking patrons away on floatables on an adventurous but tranquil journey. Usually 8-12 feet wide with water traveling at two and a half to three miles per hour, the lazy river can offer access to other attractions or within its configuration, picnic areas can be positioned. Eating areas are frequently designed to overlook the lazy river, thus offering a relaxing, entertaining view.

Current Channel

A current channel is part of the leisure pool, usually 6-8 feet wide with water traveling at approximately two and a half to three miles per hour. It provides a similar experience as the lazy river found in larger waterparks, but at a more moderate cost. Guests can float on noodles or small rafts, and it is very popular as an ideal water walking setting both for fitness classes and adults seeking non-programmed exercise by walking with or against the current.

Water Vortex

An interesting area in pools where water jets propel water in a circular motion is a water vortex. Children of all ages enjoy swimming in the swirling water where the imagination determines the adventure. Depending on the size of the vortex, when the pump for the vortex is turned off, this area can provide an instruction space for lesson programming for youngsters, classes and activities.

Waterslide

Very popular with children, teens and adventurous adults, waterslides add excitement to pools. The thrill of mounting the stairs to the exhilaration of sliding down into the water makes waterslides one of the most desired attractions of recreational aquatics.

Otter Slide

Otter slides are designed for in-between children who are too big for the kiddy slides but too little for the height restrictions of the large waterslides.

Mat Racer

For hours of fun on a warm afternoon, a mat racer provides guests the exhilaration of racing their friends down a multi-lane slide with run-out, competing to reach the finish line first. At the same time it can offer viewing entertainment to spectators and guests waiting in line.

Spray Features

A variety of refreshing surprises from dribbling trickles to gushing torrents, spray bars, bubblers and water arches create water wonderland effects to aquatic facilities. Some spray features add dimension to leisure pools by bringing the water up and then down, offering play stations within the shallow ends of pools. Tumble Buckets (pictured) are cone-shaped cylinders that fill from individual spouts from above, creating suspense and anticipation – children never know which one will splash down next!

Flow Rider

This artificial surfing environment uses high-output water pumps to produce a flow of water approximately two inches thick over a fixed foam-padded surface. Competitions are formed and spectators enjoy watching as much as "inland surfers" enjoy the challenge. Incorporating physical action and adventure into the aquatic center can have an impact on guests returning to experience the thrill over and over.

Large Play Structures

Large water play structures are water play gyms that can be themed as water jungles, pirate coves, and rainforest temples to name a few. With slides, waterfalls, and water features, families are entertained for hours while experiencing physical fitness and family togetherness.

Water Spraygrounds or Splash Pads

An array of pleasing visual sights and sounds of children interacting with water, a water sprayground enhances the recreation value of a park or aquatic facility. Water spraygrounds feature interactive play elements located on a concrete slab or splash pad, either with or without standing water, and can be manipulated by children, a programmable computer, or turned on and off with timers. Igniting young imaginations, whimsical spraygrounds can be a cost-effective addition for all types of parks, aquatic or recreation centers.

Shade Structures

In a variety of shapes and sizes, shade structures can be placed on the deck or in the pool. They provide necessary shade from UV rays and the wide range of colors lends a festive atmosphere to the facility. They can be lowered in times of stormy weather or when not needed.

Specific User Groups - Competitive Swimming

High School Varsity Swimming

High School Varsity Swimming is typically well-supported in most communities across the U.S.; however, most schools lack the ideal facility for training and competition. Because quality pool time is usually scarce in most areas, renting pool time from area facilities can be challenging due to needs and agendas, thus pool availability can diminish as facilities experience capacity.

High school competitive swimming requirements include:

- 6-lane 25 yard pool is the required course for high school swimming. The course length is 25 yards with a minimum width of 45 feet for six 7 foot wide lanes, and 60 feet for eight 7 foot wide lanes.
- 125 spectator seats
- Training equipment may include kickboards, fins, paddles, pull buoy, course caps and goggles
- Equipment may include pace clocks, stretch cords, mats (for sit-ups, etc.), free weights, medicine balls, and possibly weight training equipment

Special Olympics

Creating positive and enduring changes in the lives of people with disabilities, their families, friends, coaches, volunteers and all who cheer them on is the goal of Special Olympics. Special Olympics serve more than 2.25 million persons in more than 200 programs in more than 150 countries. Individual events usually take place in 25 meter pools and are offered for all strokes, and relay events mirror those offered in other international swimming competitions. Currently there are 159,100 Special Olympic athletes involved in aquatics.

The following aquatic events provide meaningful competition for athletes:

- Freestyle Events: 50, 100, 200, 400, 800, and 1,500 Meter
- Backstroke, Breaststroke and Butterfly Events: 25 Meter (Breaststroke, Butterfly), 50, 100, and 200 Meter
- Individual Medley Events: 200 and 400 Meter
- Freestyle and Medley Relay Events: 4 x 25, 4 x 50 and 4 x 100 Meter 4 x 200 Meter Freestyle Relay
- Unified Sports Relay Events: Freestyle: 4 x 100 and 4 x 200 Meter Medley: 4 x 25, 4 x 50 and 4 x 100 Meter

The following aquatic events provide meaningful competition for athletes with lower ability levels:

- 25 Meter Freestyle and Backstroke
- 15 Meter Walk
- 15 and 25 Meter Floatation Race
- 10 Meter Assisted Swim
- 15 Meter Unassisted Swim

USA Swimming

USA Swimming's corporate formation was made possible by the passage of the Amateur Sports Act of 1978. National participation in USA Swimming has risen every year since 1988. The size of the annual increase is two to four times greater in the registration year following Olympic Games.

As the National Governing Body for competitive swimming in the United States, USA Swimming formulates rules, implements policies and procedures, conducts national championships, disseminates safety and sports medicine information and selects athletes to represent the United States in international competition. USA Swimming has more than 300,000 members nationwide and sanctions more than 7,000 events each year.

USA Swimming has four zones nation-wide, none of which track overall registration. The four zones are subdivided into fourteen regions. In 2001, each zone was required to host from two to four sectional championships. March of 2001 marked the first of these championships, the Speedo Champions Series.

USA Swimming delegates local governance to 59 local swim committees or LSC's, which have geographic borders (some matching state borders). The system is, however, analogous to the individual states within the Union.

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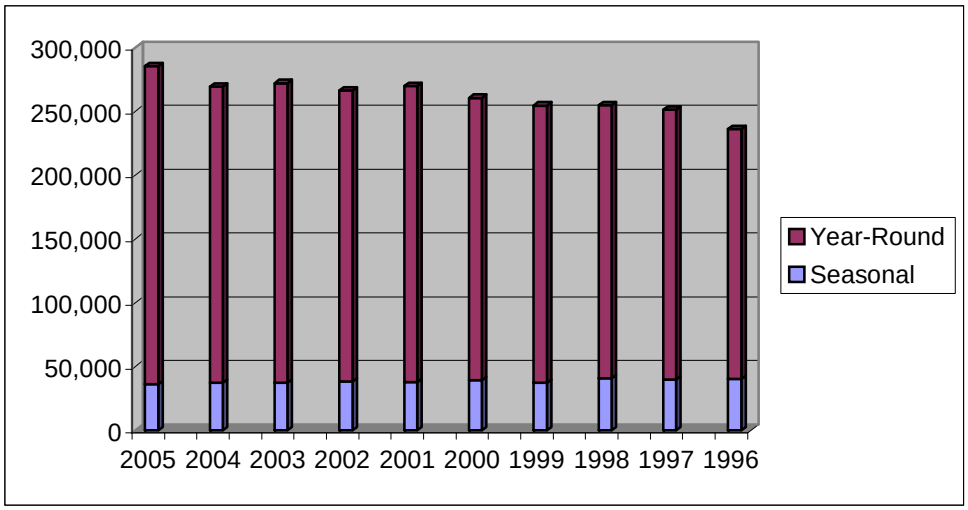
USA Swimming has organized regional and national competitions for age group competitive swimming in the United States. The following chart illustrates the historic growth of this youth sport nationally.



USA Swimming Membership Trend

Source: USA Swimming

The above chart shows a rise in the popularity of competitive swimming over the last decade. The base for that popularity is primarily in a young age group that begins around age eight and peaks at age 12, as shown in the following chart.

Average Age of Membership, 2005

AGES	FEMALE	MALE
8 and under	11.1	14.6
9	12.7	8.8
10	15.8	10.6
11	17.5	11.3
12	17.3	11.3
13	16.2	10.3
14	14.8	9.1
15	12.3	8.0
16	9.7	6.9
17	7.6	5.6
18	5.1	4.3
19 and over	3.8	4.5

Source: USA Swimming

USA Swimming, Minimum Facility Requirements

All USA Swimming sponsored swimming events must meet the minimum standards listed below.

Swimming National Championships are also listed.

- 25 meter (82 feet and ¼ inch) pools must have a nominal tolerance of plus .03 meters (1 and 3/16 of an inch) to minus .00 meters on both end walls at all points from .03 meters (1 and 3/16 of an inch) above to .8 meters (2 feet, 7 ½ inches) below the water surface.

- 50 meter (164 feet and ½ inch) pools must have a nominal tolerance of plus .03 meters (1 and 3/16 of an inch) to minus .00 meters on both end walls at all points from .03 meters above to .8 meters below the water surface.

- A minimum depth of 1.22 meters (4 feet) is required for starting block competitions; 2 meters (6 feet 7 inches) is preferred and is also the minimum depth for national championship meets.

- Light intensity over starting platforms and turning ends shall be no less than 100 foot candles (600 lux).

- Lanes must be 2.13 meters (7 feet) wide. For national championships, lanes must be at least 2.5 meters (8 feet 2 and ½ inches) wide with additional open water space of at least .45 meters (1 foot 6 inches) outside of each the first and last lanes.

- Water temperature shall not be less than 26 degrees Celsius or 78 degrees Fahrenheit (with a nominal plus or minus 1 degree Celsius and two degrees Fahrenheit).

- Air temperature for indoor pools must be no lower than 76 degrees Fahrenheit (eight feet above deck level); humidity must be no greater than 60 percent and air velocity no less than 25 feet per minute.

The minimum facility requirement for local meets during the school year is a 6-lane 25 yard pool. During the summer months, when long course swimming prevails, 6- or 8-lane 50 meter pools are the norm. In either case, seating for spectators is considered a bonus, especially if that seating is off deck.

Meet Bidding Process

The vast majority of competitions are scheduled and sanctioned by the 59 LSCs. Each LSC has an individual bid process and set of deadlines. A typical procedure would involve an LSC accepting bids in May of a given year for a schedule that would go into effect from September of that year through August of the following year.

The following categories of swimming competition have a moderate set of bidding guidelines. Pool length and water depth standards remain constant, but variables including deck space, sight lines for officials, spectator seating capacity off the pool deck, and warm-up/cool down pool availability for competitors are important and often taken into account by the selection committee.

Speedo Champions Series (Sectional Meets)

Open Meet: Each of the four zones is charged with hosting two to four sectional championships, titled the Speedo Champions Series. As an incentive to encourage hosts to make the meets a special experience for participating athletes, a $10,000 grant is available to hosts willing to meet certain advertising and exclusivity conditions. In 2001, the first year under this system, 13 sectional meets were hosted in the spring, and 13 more were contested near the end of the summer. The meets require a minimum of 400 athletes. The sections have the authority to determine dates and host sites, while the Zone must approve these suggestions. Typically, prospective bidders at the spring meet present bids for the following year's spring and summer competitions. After hearing the presentations and asking questions, member teams in attendance vote upon the sites for the following year.

General minimum standards require eight lanes for the competition venue, preferably designated to be a "fast" pool. In these events, the availability of warm-up/cool down lanes becomes an important consideration. In short course venues, an additional eight lanes for continual warm-up/cool down is preferred. In long course venues, long course warm-up/cool down is preferred, but difficult to find. Often short course warm-up/cool down is an acceptable alternative, using the diving well in this instance. Officials prefer venues wherein diving board stands or other amenities do not impede sight lines or the ability to walk the deck for the entire length of the competition pool. Preferred spectator seating is separated or even elevated from the pool deck, and is ample for an audience from 250 to 400.

Zone Championships

Age Group Meets: The four zones are the Eastern, Southern, Central, and Western. These long course meets are held over three days and comprised of 500 and 900 athletes. Zone hosts will receive $6,000 in enhancement funding from USA Swimming upon meeting certain requirements. Bids for the following year are accepted by zone directors during the summer. Formal presentation and award of the zone championship takes place during USA Swimming's annual rules convention each September. The zones strongly encourage the hosts to offer an open water race one day immediately before or after the meet, with an additional $1,000 incentive for doing so.

High Profile Competitions

The meets that follow share a distinct bidding process. USA Swimming negotiates directly with potential hosts meeting the deadline for submission of a letter of interest. This letter is due roughly two and one-half years in advance. Meets tend to draw international participation, and are attractive to various news media. Economic impact to the area—hotels, restaurants, vehicle rentals and retail sales—can be significant. Facility requirements are high, as are expectations for impeccable organization and hospitality. Potential hosts are well served to gain event management experience by hosting the previously mentioned events before attempting to manage events such as those that follow.

Grand Prix Meets

USA Swimming supports four or five meets each year that are part of a Grand Prix Series. In concept, the nation's most elite athletes are anticipated to compete head-to-head several times before reaching the championship portion of the season. Bids for Grand Prix Meets must be submitted to USA Swimming's National Events Department by August 1 of a given year. The bids are then turned over to the National Steering Committee for review. The Olympic International Operations Committee (OIO) makes the final decisions and presents the winners at the annual convention. The meets must be held in 50 meter pools, though they need not be limited to indoor venues. Any dates will be considered, but USA Swimming has four sets of preferred dates from mid-May to mid-July. USA Swimming will provide matching funds of up to $10,000 as an incentive to provide travel reimbursement for high profile domestic athletes in order to insure the highest possible level of competition. Foreign athletes are encouraged to attend, and the potential for travel reimbursement exists, but only after USA's National "A" and "B" team members have first been offered reimbursements.

U.S. Open

The U.S. Open Swimming Championship is an international invitational held in early December each year. The meet is held long course (50 meters) in pre-Olympic years and in a 25 meter course the other three years of each Olympic quadrennial. In order to host, venues must conform to the more stringent requirements for national championships. Generally, 800-900 elite athletes attend these meets. In pre-Olympic years, over 1100 entrants from 48 countries have

participated in the U.S. Open. $15,000 in enhancement money is available from USA Swimming. Potential hosts must submit a letter of interest, usually by June 1, two and one-half years in advance of the actual competition dates. USA Swimming will individually contact those expressing interest. Later, the possibilities will then be negotiated.

FINA World Cup

The Federation Internationale de Natation Amateur, or FINA, is the global governing body for amateur aquatic sports. The FINA World Cup is a ten meet, worldwide series. The United States is awarded one of the ten meets, typically over two days in late November. The meets are held in 25 meter pools. FINA prefers these meets to be held in major metropolitan areas and often arranges for television coverage on ESPN or ESPN2. In its first three years in the U.S., this event has averaged 250 athletes from 35-40 countries. The bidding process mirrors that of the U.S. Open: the submission of a letter of interest approximately two and one-half years in advance is followed by individual negotiations with USA Swimming officials.

National Disability Championships

USA Swimming conducts an annual long course championship swim meet for athletes from all disability populations—physical, sensory and cognitive. The USA Swimming Adapted Swimming Committee works closely with the host in the administration and organization of this event. Historical participation indicates that anywhere from 100 to 250 athletes will take part. Again, a letter of interest must be submitted two and one-half years in advance, followed by individual negotiation between USA Swimming and the potential hosts.

National Championships

Two championships are held each year. The Spring Championships are conducted in a 25 meter course; the Summer Championships are held in a 50 meter course. National Championships are the premier domestic meets in a given year, attracting from 900-1200 of the nation's finest athletes. Hosts can earn up to $20,000 from USA Swimming. Bids for the summer competition must also include a bid for the 5K Open Water National Championships. Indoor venues are preferred, as are separate warm-up/cool-down pools of equal length to the competition pool. Seating for several hundred spectators is preferred. Lighting of 100 foot candles is required for television coverage.

Trials for International Competitions

International meets (such as the World Championships, Pan American Games and Olympic Games) are the pinnacle of elite competition in the United States. Our nation's international teams are selected from the results of these meets. Most years, the National Championships will serve a dual role, doubling as the

international team selection meet. In some cases, the international team selection meets will be stand-alone competitions. The Olympic Trials will always be a separate meet. Hosts must bid the Olympic Trials nearly four years in advance, submitting a non-refundable $1,000 deposit with their letter of interest. Only the finest venues in the country—with proven records of hosting major events—will be considered. For the past six Olympiads (24 years), only three venues (University of Texas Swim Center at Austin, Indiana University/Purdue University at Indianapolis, and the Heritage Park Aquatic Complex in Irvine, California) have won the rights to this prestigious Olympic Trials meet. Indianapolis, the 2000 host, sold out every single session of spectator seating (4300 seats) six months in advance. Economic impact to the area was estimated at $6.7 million.

Pool Rental

The following table presents information by USA Swimming for rental cost per pool lane/per hour. The fees reflect costs per square foot per lane for nine hours per day (5AM-7AM, the noon hour, and 3:30PM-9:30PM), 360 days per year, with shared costs with other aquatic amenities. Some facilities will need to charge more or less, depending on regional cost of doing business, no shared costs, and other considerations.

Rental Cost per Lane per Hour

	6 lane - 25yd	8 lane - 25yd	8 lane - 50M	23 lane - 50M set up short course
# of Lanes	6	8	8	23
Cost per Lane	$14	$14	$25	$14

Source: USA Swimming

Issues Facing USA Swimming

Participation:

Far more females are members of USA Swimming than are males. In the year 2000, 138,701 females and 82,651 males participated in USA Swimming. Similar trends have been noted from previous years, and they corroborate participation statistics from both the National Federation of High Schools and the National Collegiate Athletic Association. However, latest statistics show that in 2005, female USA Swimming participants were at 143,900 and males were at 105,300. This reveals that female participation increased by 5,199, while males increased by 22,649 from the year 2000.

Length/Duration of Swim Meet Sessions:

For many years, attempts have been made to shorten the amount of time swimmers and their families must spend at the pool for a competition. While an entire youth soccer, softball, or baseball game can be completed in less than 2 hours, swim meet sessions are limited to four hours, excluding the warm-up period. Many alternative formats for quicker novice meets have been proposed, but they all have the same limitation: profitability. USA Swimming's current meet structure may take too

long, but the host team realizes a tidy profit from its labors. If multiple shorter meets are held, the pool of available volunteer workers will shrink, and more meets will need to be held in order to raise similar levels of funds. While accepted as a necessary evil for the older, more advanced participants, shorter competitions are seen as a key to recruiting and keeping young swimmers in the sport.

Masters Swimming Teams

U.S. Masters Swimming is an organized program of swimming for adults 18+ participating in lap swimming to international competition. Some join for health, fitness, camaraderie, fun, the thrill of competition, travel, coaching or just for a regular work-out routine. With 40,000 members in over 450 local Masters Swim Clubs, the U.S. is divided into Local Masters Swimming Committees (LMSC), which are composed of smaller teams and unaffiliated swimmers. About 30% of Masters swimmers compete in swimming meets on a regular basis.

For the serious competitors, opportunities to test skill and conditioning include:

- Short Course (25 yard and 25 meter)
- Long Course (50 meter) pool meets
- Lake and ocean open water swims
- Postal meets
- Special events
- International championships

Many of the competitive events held by Masters Swimming Zone championships draw as many as 300 athletes or more twice a year, plus spectators.

Senior Swimming is also growing in popularity. Swimming, according to participation figures compiled by the National Senior Sports Classic, rated as the most popular of 18 sports in the competition, with over 19% of all entrants registered for swimming events. The recent Senior Olympics National Competition has drawn more than 10,000 competitors.

NORTH TEXAS USA SWIMMING LSC 27 TEAMS

In 2006, the North Texas LSC had 4,495 swimmers.

Academy of Texas Aquatic Champions
4429 Buchanan
Plano, TX 75024
972.467-5777
Pools:
Dallas – Greenhill School
Dallas – Alfred J. Loos Natatorium
Dallas – Jewish Community Center Indoor Pool
Carrollton – Thomas Outdoor Pool

Champion Aquatic Team
PO Box 366
Judson, TX 75660
903-927-1193
Pools:
Longview – Longview HS Aquatic Center

City of Plano Swimmers
2925 W 15th Street
Plano, TX 75075-7632
972.398-7946
Pools:
Plano – Oak Point Recreation Center
Plano – Plano Aquatic Center
Plano – Rowlinson Natatorium
Plano – Jack Carter Pool

City of Richardson Swim Team
PO Box 835412
Richardson, TX 75083-5412
972.669-8326
Pools:
Richardson – Berkner HS Natatorium
Richardson – JJ Pearce HS Indoor Pool
Addison – Loos Natatorium
Richardson – Cotton Wood Outdoor Pool
Dallas – Jewish Community Center Indoor Pool
Carrollton – Thomas Outdoor Pool

Cleburne Area Swimmers
1001 Hyde Park Ct
Cleburne, TX 76033
817.645-7850
Pools:
Cleburne – Splash Station Indoor Pool

The Colony Institute of Aquatics
PO Box 561359
The Colony, TX 75056
469.252-4554
Pools:
The Colony – The Colony Aquatic Park

Dallas Mustangs
100 Ginkgo Cir
Irving, TX 75063-3459
972.506-9720
Pools:
Dallas – Alfred J Loos Natatorium
Dallas – A.R. Barr Pool
Dallas – Highland Park HS Pool
Dallas – Carrollton-Farmer's Branch ISD Natatorium

Fort Worth Area Swim Team
PO Box 15351
Fort Worth, TX 76119-0351
817.874-5655
Pools:
Fort Worth – Wilkerson-Greines Activity Center
Fort Worth – Forest Park Pool
Fort Worth – Ridglea Pool Association

Frisco Aquatics
5729 Lebanon Rd, Suite 144-146
Frisco, TX 75034
214.226-4498
Pools:
Frisco – Frisco ISD Natatorium

Grapevine-Colleyville Aquatic Team
PO Box 2391
Grapevine, TX 76099-2391
817.939-3530
Pools:
Grapevine – GCISD Swim Center

Henderson County YMCA Megladon
914 Bradley Dr
Athens, TX 75751-2948
903.675-6727
Pools:
Athens – Henderson County YMCA

Heart of Texas Aquatic Team
2402 Colcord
Waco, TX 76707
254.753-7875
Pools:
Waco – Eddy Humphreys Aquatic Center

Irving Swimmers
330 Las Colinas Blvd E. #328,
Irving, TX 75039
972.989-4571
Pools:
Irving – North Lake College Natatorium

Lakeside Aquatic Club
PO Box 270189
Flower Mound, TX 75027
214.697-4145
Pools:
Flower Mound – LISD HS Natatorium
The Colony – LISD HS Natatorium
Carrollton – Thomas Outdoor Pool
Keller – Keller ISD Natatorium
Denton – Denton Natatorium

Longview Swim Club
1613 Chippewa
Longview, TX 75605
903.758-2920
Pools:
Longview – LeTourneau University Mabee Natatorium

Mansfield Aquatic Club
1001 N Holland Rd
Mansfield, TX 76063
817.276-5230
Pools:
Mansfield – Mansfield ISD Natatorium

Mid-Cities Arlington Swimmers
PO Box 13849
Arlington, TX 76094
817.925-0505
Pools:
Euless – Trinity HS Natatorium
Arlington – Tarrant County College Southeast Campus
Arlington – UTA Outdoor Pool

Metroplex Aquatics
5802 Hathaway Dr
Parker, TX 75002
972.897-7072
Pools:
Allen – Don Rodenbaugh Natatorium
Tyler – Tyler ISD Aquatic Center
Tyler – Fun Forest Pool
Richardson – Metro Elite Pool

North Texas Nadadores
6800 Megan Ln
North Richland Hills, TX 76180
817.949-8204
Pools:
Southlake – Carroll ISD Aquatic Center

Rockwall Swimming
1000 Yellow Jacket Ln Apt 1414
Rockwall, TX 75087
469.338-8836
Pools:
Rockwall – Rockwall YMCA

South West Aquatics of Texas
1214 Plateau,
Duncanville, TX 75116
214.564-8177
Pools:
Duncanville – Duncanville HS Natatorium
Dallas – Mountain View College Outdoor Pool

Southern Methodist University
Box 234, SMU
Dallas, TX 75275-0234
214.768-2944
Pools:
Dallas – Perkins Natatorium
Dallas – A.R. Barr Pool

Swim Nation Aquatic Program
P.O. Box 1173
Keller, TX 76248
817.739-3411

Texins Aquanauts
13900 N Central Expwy
Dallas, TX 75243-1077
972.995-5036

Water Works 2
6632 Eton Ct
Fort Worth, TX 76132
817.731-1418
Pools:
Fort Worth – Tarrant County College NW Campus
Fort Worth – Westside YMCA
Benbrook – Benbrook Community Center / YMCA
Fort Worth – Lockheed-Martin Rec Association Outdoor Pool

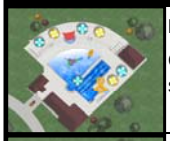
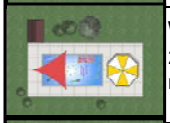
Wichita Falls Aquatic Club
402 Shoreline Drive
Wichita Falls, TX 76308-5710
940.692-6493

Wichita Falls Elite Swim Team
1613 Yucca Dr
Iowa Park, TX 76367
940.592-4356
Pools:
Wichita Falls – Boys & Girls Club of Wichita Falls

[3] U.S. Centers for Disease Control and Prevention
http://www.cdc.gov/ncipc/factsheets/drown.htm

Section 3: Development Concepts

Several development concepts, on which the aquatics system could be based, were devised for study. The intent of studying these concepts was to look at different ways of approaching the challenge of creating a citywide system. Specific sites selected for proposed aquatic centers will be based on established community pool locations, service gaps, and spatial considerations. The following chart is an overview of the "toolbox" of concepts described in this section.

		Project Cost	Projected Attend.
	**Neighborhood Family Aquatic Center (NFAC)** Outdoor leisure pool w/ 3 lap lanes, tot pool, play features, shade, bathhouse.	$3.5 Million	33,100
	**Medium Family Aquatic Center (MFAC)** Outdoor lap/diving pool, leisure and tot pools, play features, bathhouse.	$6.5 million	71,000
	**Large Family Aquatic Center (LFAC)** Outdoor 50 meter competitive pool, 125 seats, leisure and tot pools, group pavilion, play features, bathhouse.	$13.2 million	125,500
	**Bundled Indoor/Outdoor Aquatic Center (CC)** Indoor competitive & leisure/therapy pools, spa, outdoor leisure pool, play features, bathhouse. Access to community center.	$16.1 million	115,300
	**Water Sprayground (Pad)** 2,100 s.f. sprayground, spray features, fencing, lighting, mechanical, shade structures, pool deck, UV sanitizer.	$800,000	16,157
	**Indoor 50 M** Indoor 50 meter competition pool, 900 seats, moveable floor, 2 bulkheads, diving.	$16.1 million	81,000
	**Destination Facility** Outdoor leisure and tot pools, slides, play features, FlowRider, lazy river, shade structures, bathhouse.	$14.4 million	139,400
	**Indoor Wellness Pool** 1,650 s.f. natatorium, 600 s.f. therapy pool, locker rooms.	$1.3 million	7,756

Element A: Neighborhood Family Aquatic Center (NFAC)

The outdoor Neighborhood Family Aquatic Center features a 5,467 square foot leisure pool with zero-beach entry, a safe and easy way for everyone to enter the pool without steps or ladders. Play features include a waterslide to provide thrills for teens and daring adults; a participatory play feature located near the zero-beach entry offers activities for children to crawl across tunnels, scamper through spraying water, climb across bridges, and slide down waterslides; and an otter slide is designed for in-between children who do not yet meet the height restriction of the large waterslide. Three lap lanes offer adults and seniors a place to enjoy fitness lap swimming while a 700 square foot tot pool with slide offers young children an opportunity to become acquainted with aquatics in an age appropriate setting. Also included are five shade structures, bathhouse, snack bar, two family changing rooms and locker rooms. Filtration includes a UV sanitizer. Based on 2009 construction dollars, the estimated project cost is approximately $3.5 million.

NOT TO SCALE

CONCEPTUAL ONLY

Table 1
Opinion of Project Cost: Neighborhood Family Aquatic Center

Unit		Sq. Ft.	Opinion of Cost
Demolition			Not Included
Bathhouse		3,690	$573,711
Lobby		100	
Managers Office		125	
Guard Room / First Aid		100	
Pool Mechanical		900	
Building Mechanical		100	
Storage		500	
Locker Rooms		900	
Family Changing Room (2)		150	
Snack Bar		200	
Efficiency		615	
Aquatics		6,167	$1,354,470
Leisure Pool		5,467	
Waterslide (A)		1	
Participatory Play Feature		1	
Otter Slide		1	
Tot Pool		700	
UV sanitizer		1	
Slide		1	
Support			$200,161
Outdoor Deck		7,400	
Fence		454	
Overhead Lighting		13,567	
Equipment		1	
Shade Structures		5	
Total Building Construction Costs			**2,128,342**
Site Construction Costs (Parking Lot, Landscaping, Utilities)			$431,435
Land Acquisition			Not Included
Subtotal			$2,559,777
Inflation (2 year)	10%		$255,978
Contingency	10%		$281,575
Indirect Costs	10%		$309,733
Total Estimated Project Costs:			$3,407,063
Say			**$3,500,000**

Source: Counsilman-Hunsaker

Element B: Medium Family Aquatic Center (MFAC)

The outdoor Medium Family Aquatic Center features a competitive component and a recreation component. A 6-lane 25 yard pool with two diving boards provides swim events in the summer season and will accommodate water exercise, aerobic classes, swim team training, diving opportunities and other aquatic lessons. A 9,200 square foot leisure pool provides a swimming experience where children can romp in the zero-beach and make a big splash on the participatory play feature. This colorful "wet playground" provides climbing opportunities with operating valves, sprays and slides for hands-on activities. Two waterslides offer plunging excitement for teens and adventurous families while tumble buckets delight children when filling up and splashing down. An otter slide is child-friendly for those children who are not tall enough to ride the waterslide but too big for the kiddy slide. A current river provides a serene journey for all ages and a great way to water walk against the current. A 700 square foot tot pool with slide offers Fort Worth's youngest guests a safe place to enjoy early aquatics. Also included are eight shade structures, bathhouse, snack bar, two family changing rooms and locker rooms. Based on 2009 construction dollars, the estimated project cost is approximately $6.5 million.

NOT TO SCALE

CONCEPTUAL ONLY

Table 2
Opinion of Project Cost: Medium Family Aquatic Center

Unit	Sq. Ft.		Opinion of Cost
Demolition			Not Included
Bathhouse	5,430		$845,537
Lobby	100		
Managers Office	125		
Guard Room / First Aid	100		
Pool Mechanical	1,300		
Building Mechanical	200		
Storage	700		
Locker Rooms	1,400		
Family Changing Room (2)	150		
Snack Bar	450		
Efficiency	905		
Aquatics	13,275		$2,679,330
Leisure Pool	9,200		
Waterslide (A)	1		
Waterslide (B)	1		
Participatory Play Feature	1		
Otter Slide	1		
Tumble Bucket	1		
Current River	1		
Lap Pool (6 Lane 25 Yard)	3,375		
Diving Board	2		
Tot Pool	700		
Slide	1		
Support			$462,380
Outdoor Deck	15,930		
Fence	634		
Overhead Lighting	29,205		
Equipment	1		
Shade Structures	8		
Total Building Construction Costs			**3,987,247**
Site Construction Costs (Parking Lot, Landscaping, Utilities)			$865,875
Land Acquisition			Not Included
Subtotal			$4,853,122
Inflation (2 year)		10%	$485,312
Contingency		10%	$533,843
Indirect Costs		10%	$587,228
Total Estimated Project Costs:			$6,459,505
Say			**$6,500,000**

Source: Counsilman-Hunsaker

Element C: Large Family Aquatic Center (LFAC)

To accommodate the competitive and recreation aquatic needs of the residents of Fort Worth, the outdoor Large Family Aquatic Center is designed to be very attractive to many organized swimming events and recreational aquatic opportunities for all ages. A separate 50 meter competitive pool with two diving boards, two bulkheads and 800 spectator seats provides swim team events in the summer while accommodating water exercise, aerobic classes, swim team training, diving opportunities and other aquatic lessons. The recreation component of this concept consists of a heated 13,300 square foot leisure pool with zero-beach entry, two waterslides, a participatory play feature, tumble buckets, and a current river. A 2,000 square foot tot/spray pool features a slide and a gentle spray feature for little ones. Also included: a group pavilion, bathhouse, twelve shade structures, snack bar, two family changing rooms and locker rooms. Filtration includes UV sanitizer. Based on 2009 construction dollars, the estimated project cost is approximately $13.2 million.

NOT TO SCALE

CONCEPTUAL ONLY

Table 3
Opinion of Project Cost: Large Family Aquatic Center

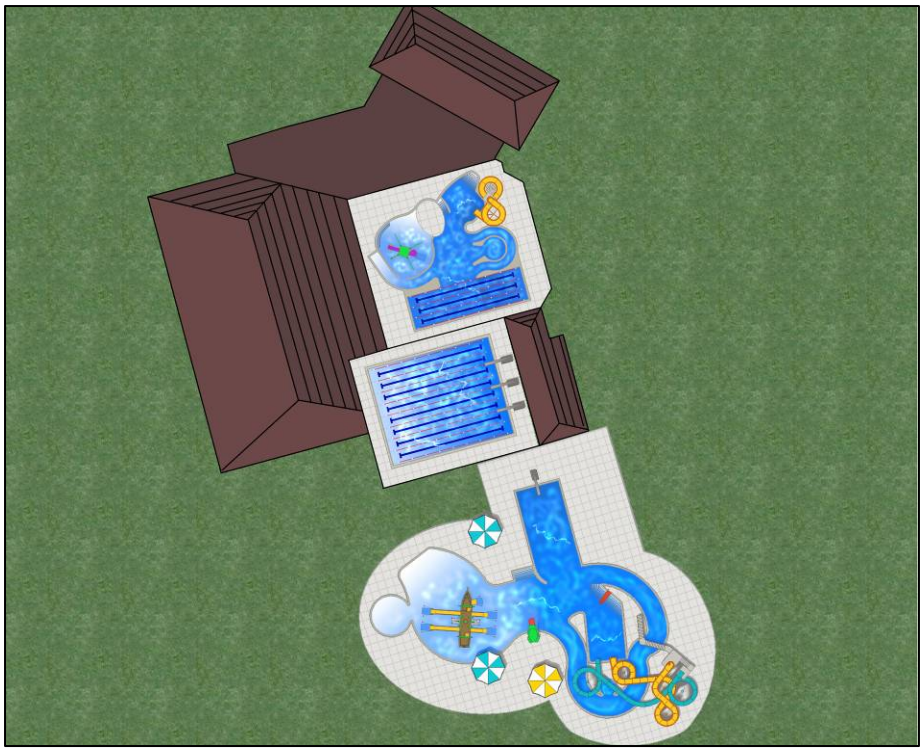
Unit	Sq. Ft.	Opinion of Cost
Demolition		Not Included
Bathhouse	8,760	$1,371,492
Lobby	600	
Managers Office	150	
Guard Room / First Aid	300	
Pool Mechanical	1,800	
Building Mechanical	400	
Storage	1,200	
Locker Rooms	2,200	
Family Changing Room (2)	150	
Snack Bar	500	
Efficiency	1,460	
Aquatics	32,520	$5,629,880
Leisure Pool	13,300	
Waterslide (A)	1	
Waterslide (B)	1	
Participatory Play Feature	1	
Tumble Bucket	1	
Current River	2	
50 Meter Pool	13,220	
Diving Board	2	
Spectator Seating (800)	4,000	
Moveable Bulkhead	2	
Tot / Spray Pool	2,000	
UV Sanitizer	1	
Spray Features	1	
Slide	1	
Pool Heater	1	
Support		$893,772
Outdoor Deck	39,024	
Pavilion	1	
Fence	915	
Overhead Lighting	71,544	
Equipment	1	
Shade Structures	12	
Total Building Construction Costs		**7,895,143**
Site Construction Costs (Parking Lot, Landscaping, Utilities)		$2,007,600
Land Acquisition		Not Included
Subtotal		$9,902,743
Inflation (2 year)	10%	$990,274
Contingency	10%	$1,089,302
Indirect Costs	10%	$1,198,232
Total Estimated Project Costs:		$13,180,551
Say		**$13,200,000**

Source: Counsilman-Hunsaker

Element D: Bundled Indoor/Outdoor Aquatic Center (CC)

Very popular for communities desiring year-round family fitness, the Bundled Indoor/Outdoor Aquatic Center has access to an existing or future community center (not included in construction cost) and features an indoor competitive pool, indoor leisure pool, and an outdoor leisure pool. The 8-lane 25 yard indoor competitive pool features two diving boards and 125 spectator seats. A 5,800 square foot indoor leisure pool offers a participatory play feature, waterslide, current channel, and water vortex where kids enjoy swimming around the swirling play area. Three lap lanes and a 300 square foot spa provide adults indoor fitness and leisure opportunities. The outdoor facility offers a 9,200 square foot leisure pool with three fitness lap lanes, two waterslides, a participatory play feature, current river, otter slide, tumble buckets, and a 700 square foot tot pool with slide. Also included: six shade structures, bathhouse, two family changing rooms, locker rooms and snack bar. Filtration includes a UV sanitizer. Based on 2009 construction dollars, the estimated project cost is approximately $16.1 million.

NOT TO SCALE



CONCEPTUAL ONLY

Table 4

Opinion of Cost:

Unit	Sq. Ft.	Opinion of Cost
Demolition		Not Included
Public Spaces	3,200	$574,188
Control / Cashier	400	
Administrative Offices (2)	400	
Vending / Concession Area	450	
Locker Rooms	1,800	
Family Changing Room (2)	150	
Natatorium	22,250	$6,315,418
Lap Pool (8 Lane 25 Yard)	4,500	
Springboard Diving	2	
Recreation Pool	5,800	
Participatory Play Feature	1	
Current Channel	1	
Vortex	1	
Waterslide	1	
Spa	300	
Natatorium	19,550	
Seating (125 seats)	750	
Pool Mechanical Room	1,200	
Storage	750	
Outdoor Aquatics	24,960	$2,369,750
Seasonal Bathhouse	1,200	
Leisure Pool	9,200	
Waterslide (A)	1	
Waterslide (B)	1	
Participatory Play Feature	1	
Otter Slide	1	
Tumble Bucket	1	
Current River	1	
Tot Pool	700	
UV Sanitizer	1	
Slide	1	
Building Support	1,400	$362,800
Building Mechanical	800	
Electrical	500	
Janitor	100	
Furnishings & Equipment	1	
Support		$240,355
Outdoor Deck	13,860	
Fence	617	
Overhead Lighting	23,760	
Shade Structures	6	
Efficiency	5,370	$816,240
Circulation and Walls (20%)	5,370	
Total Building Construction Costs	**32,220**	**10,678,750**
Site Construction Costs (Parking Lot, Landscaping, Utilities)		$1,399,500
Land Acquisition		Not Included
Subtotal		$12,078,250
Inflation (2 year)	10%	$1,207,825
Contingency	10%	$1,328,608
Indirect Costs	10%	$1,461,468
Total Estimated Project Costs:		$16,076,151
Say		**$16,100,000**

Project Bundled

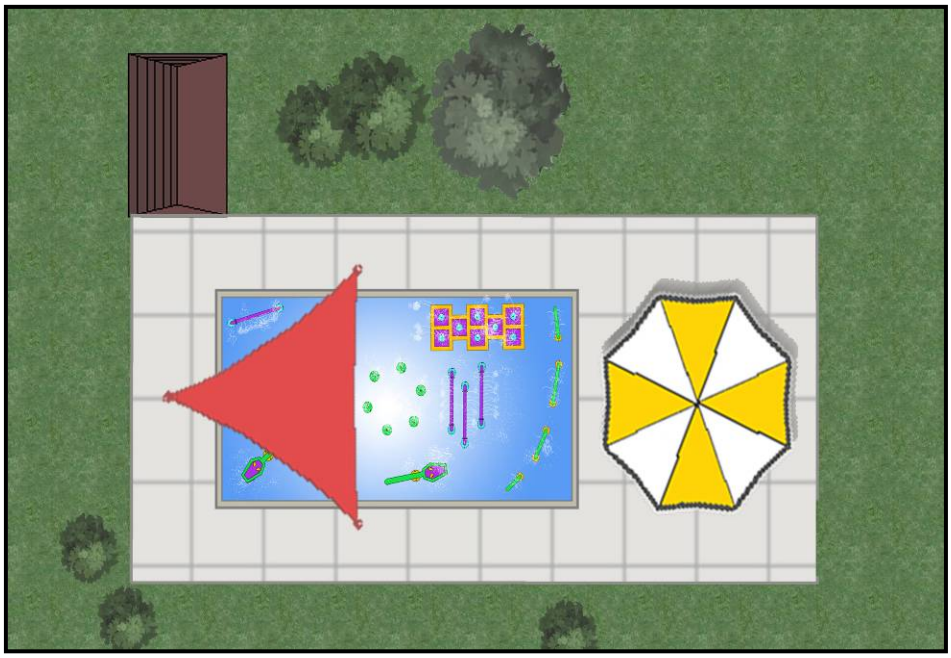
Indoor/Outdoor Aquatic Center

Source: Counsilman-Hunsaker

Element E: Water Sprayground (PAD)

The 2,100 square foot water sprayground delights children with a colorful water wonderland for hours of zipping around the interactive, gentle spray features. It includes a splash pad, fencing, lighting, mechanical, three shade structures, pool deck, and UV sanitizer. Based on 2009 construction dollars, the estimated project cost is $800,000.

NOT TO SCALE



CONCEPTUAL ONLY

Table 5
Opinion of Project Cost: Water Sprayground

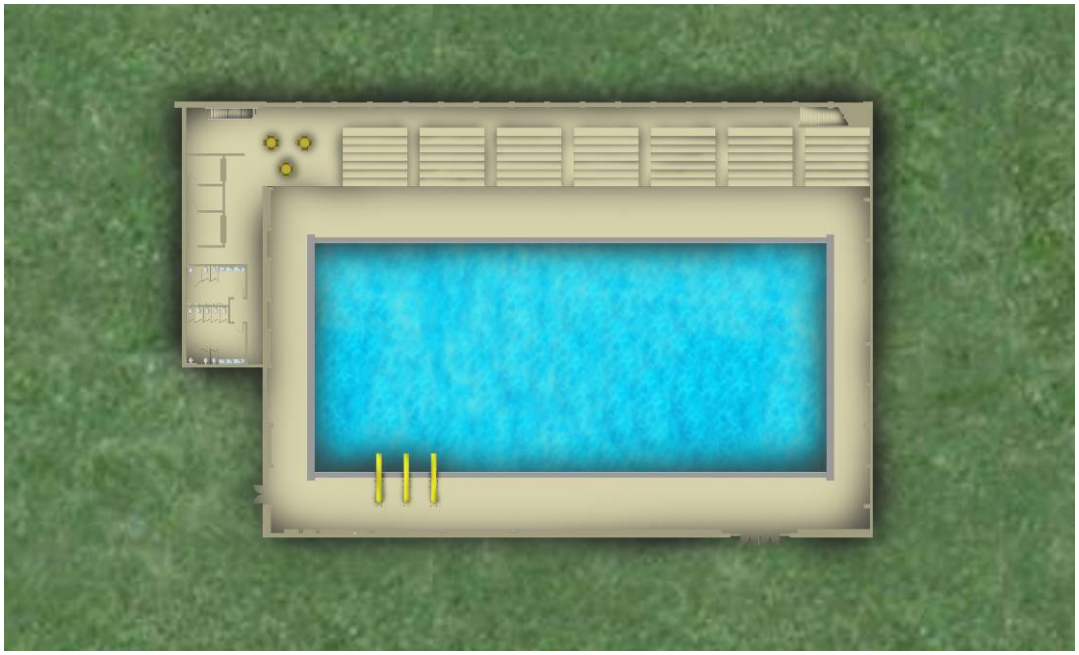
Unit		Sq. Ft.	Opinion of Cost
Demolition			Not Included
Bathhouse		402	$40,538
Pool Mechanical		335	
Efficiency		67	
Aquatics		2,100	$363,104
Sprayground		2,100	
UV Sanitizer		1	
Filtration Vault		1	
Filtration Equipment		1	
Sprayground Features		1	
Support		7,560	$101,807
Outdoor Deck		5,460	
Fence		348	
Overhead Lighting		7,560	
Equipment		1	
Shade Structures		3	
Total Building Construction Costs			**505,449**
Site Construction Costs (Parking Lot, Landscaping, Utilities)			$95,544
Land Acquisition			Not Included
Subtotal			$600,993
Inflation (2 year)	10%		$60,099
Contingency	10%		$66,109
Indirect Costs	10%		$72,720
Total Estimated Project Costs:			$799,921
Say			**$800,000**

Source: Counsilman-Hunsaker

Element F: Indoor 50 Meter Pool (50 M)

This natatorium competition venue is designed to meet the needs of year-round major swimming meets as well as year-round programming for aquatics, fitness and lessons. Features include an indoor 50 meter Olympic size competitive pool with three diving boards, 900 spectator seats, two bulkheads and a movable floor. USA Swimming does not specify but recommends a minimum of 400 seats for USA Swim Invitational meets; a minimum of 600 seats for USA Swim LSC Championships or Sectional meets; and a minimum of 1,000 seats for USA Swim National caliber meets. The bulkheads and movable floor allow simultaneous instructional, fitness, and recreational opportunities and consequently, revenue potential. Also included is a snack bar, lifeguard room, meeting room, locker rooms and family changing room. Based on 2009 construction dollars, the estimated project cost is approximately $16.1 million.

NOT TO SCALE



CONCEPTUAL ONLY

Table 6
Opinion of Project Cost: 50 M

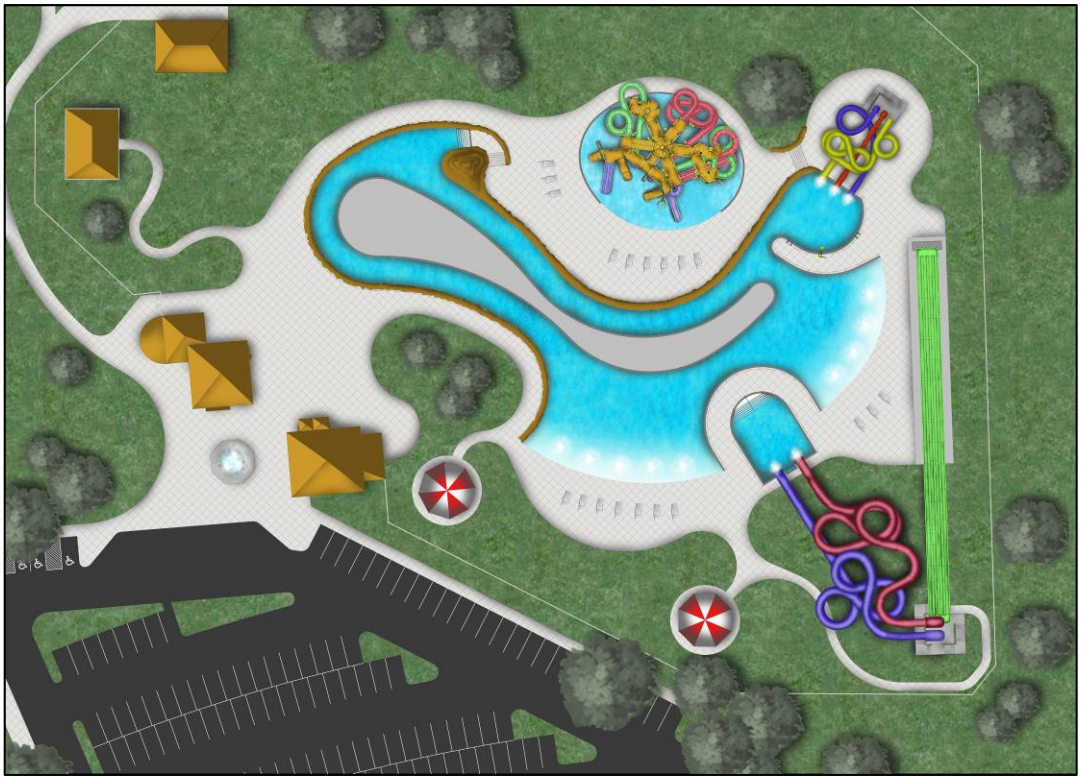
Unit		Sq. Ft.	Opinion of Cost
Demolition			Not Included
Public Spaces		6,300	$1,074,500
Lobby		2,000	
Administrative		900	
Lifeguard / Timing		250	
Meeting Room		700	
Locker Rooms		1,400	
Family Changing Room		400	
Public Restrooms		450	
Snack Bar		200	
Natatorium		39,826	$7,609,150
50 Meter X 25 Yards		12,920	
Moveable Floor		1	
Bulkhead		2	
Springboard Diving		3	
Natatorium		20,200	
Spectator Seating (900)		4,500	
Pool Mechanical & Chemical		1,200	
Pool Storage		1,000	
Building Support		2,201	$448,000
Building Mechanical		2,000	
Janitor		200	
Furnishings & Equipment		1	
Efficiency		9,665	$1,469,141
Circulation and Walls (20%)		9,665	
Total Building Construction Costs		57,992	**$10,600,791**
Site Construction Costs (Parking Lot, Landscaping, Utilities)			$1,449,810
Land Acquisition			Not Included
Subtotal			$12,050,601
Inflation (2 year)	10%		$1,205,060
Indirect Costs	10%		$1,325,566
Contingency	10%		$1,458,123
Total Estimated Project Costs:			$16,039,350
Say			**$16,100,000**

Source: Counsilman-Hunsaker

Element G: Destination Facility

A municipal waterpark destination facility offers vacationers and residents a valued product that offers a combination of tranquil and exhilarating swimming amenities by marrying the municipal pool with family features of a waterpark. This outdoor destination facility includes a 20,328 square foot leisure pool with waterslides for the whole family, including a body slide, tube slide, mat racer, and otter slide. A large play structure offers the family a place to explore a colorful, interactive water play gym with tunnels, climbing features and slides. A lazy river meanders through the aquatic park while tumble buckets splash down on waiting children. A FlowRider brings the thrill and challenge of surfing to Fort Worth by literally surfing in place – the greater your skill, the longer you surf. The wave technology creates quite a stir among participants as well as the audience. Competitions form, bringing users back again and again. Fort Worth's smallest guests are accommodated with a 1,200 square foot tot pool. Also included are two family changing rooms, snack bar and eight shade structures. Based on 2009 construction dollars, the estimated project cost is approximately $14.4 million.

NOT TO SCALE



CONCEPTUAL ONLY

Table 7
Opinion of Project Cost: Destination

Unit		Sq. Ft.	Opinion of Cost
Demolition			Not Included
Bathhouse		7,380	$1,154,310
Managers Office		100	
Recep Office		150	
Guard Room / First Aid		250	
Pool Mechanical		2,500	
Building Mechanical		100	
Storage		500	
Locker Rooms		1,800	
Family Changing Room (2)		300	
Snack Bar		450	
Efficiency		1,230	
Aquatics		21,530	$7,002,480
Leisure Pool		20,328	
Waterslide Body Slide		1	
Waterslide Tube Slide		1	
Mat Racer		1	
Otter Slide		1	
Tumble Bucket		1	
Play Features		1	
Lazy River		1	
Flowrider		1	
Lazy River Equipment		1	
Tot Pool		1,200	
Participatory Play Feature		1	
Support			$803,781
Outdoor Deck		43,060	
Fence		1,007	
Overhead Lighting		64,590	
Equipment		1	
Shade Structures		8	
Total Building Construction Costs			**8,960,571**
Site Construction Costs (Parking Lot, Landscaping, Utilities)			$1,799,250
Land Acquisition			Not Included
Subtotal			$10,759,821
Inflation (2 year)	10%		$1,075,982
Contingency	10%		$1,183,580
Indirect Costs	10%		$1,301,938
Total Estimated Project Costs:			$14,321,322
Say			**$14,400,000**

Source: Counsilman-Hunsaker

Element H: Indoor Wellness Pool (Therapy)

The Indoor Wellness Pool features a 1,650 square foot natatorium with a 600 square foot warm water therapy pool designed to assist those with strained muscles, arthritis, and other aquatic therapy needs as well as aqua aerobics and gentle water exercise for the community. It is the consulting team's opinion that in order to maximize revenue potential and health benefits to the community, programming needs to concentrate on therapy associated with a medical provider. This approach is a separate business and not commonly incorporated with a community aquatics program. Based on 2009 construction dollars, the estimated project cost is $1.3 million.

NOT TO SCALE

CONCEPTUAL ONLY

Table 8
Opinion of Project Cost: Indoor Wellness Pool

Unit		Sq. Ft.	Opinion of Cost
Demolition			Not Included
Public Spaces		1,170	$216,350
Lobby		115	
Evaluation Room		180	
Locker Rooms		500	
Family Rooms		375	
Natatorium		1,950	$451,050
Therapy Pool		600	
Natatorium		1,650	
Pool Mechanical & Chemical		200	
Pool Storage		100	
Building Support		176	$154,315
Building Mechanical		125	
Janitor		50	
Furnishings & Equipment		1	
Efficiency		624	$115,440
Circulation and Walls (20%)		624	
Total Building Construction Costs		3,744	**$821,715**
Site Construction Costs (Parking Lot, Landscaping, Utilities, Demolition)			$93,600
Land Acquisition			Not Included
Subtotal			$915,315
Inflation (2 year)	10%		$91,532
Contingency	10%		$100,685
Indirect Costs	10%		$110,753
Total Estimated Project Costs:			$1,218,284
Say			**$1,300,000**

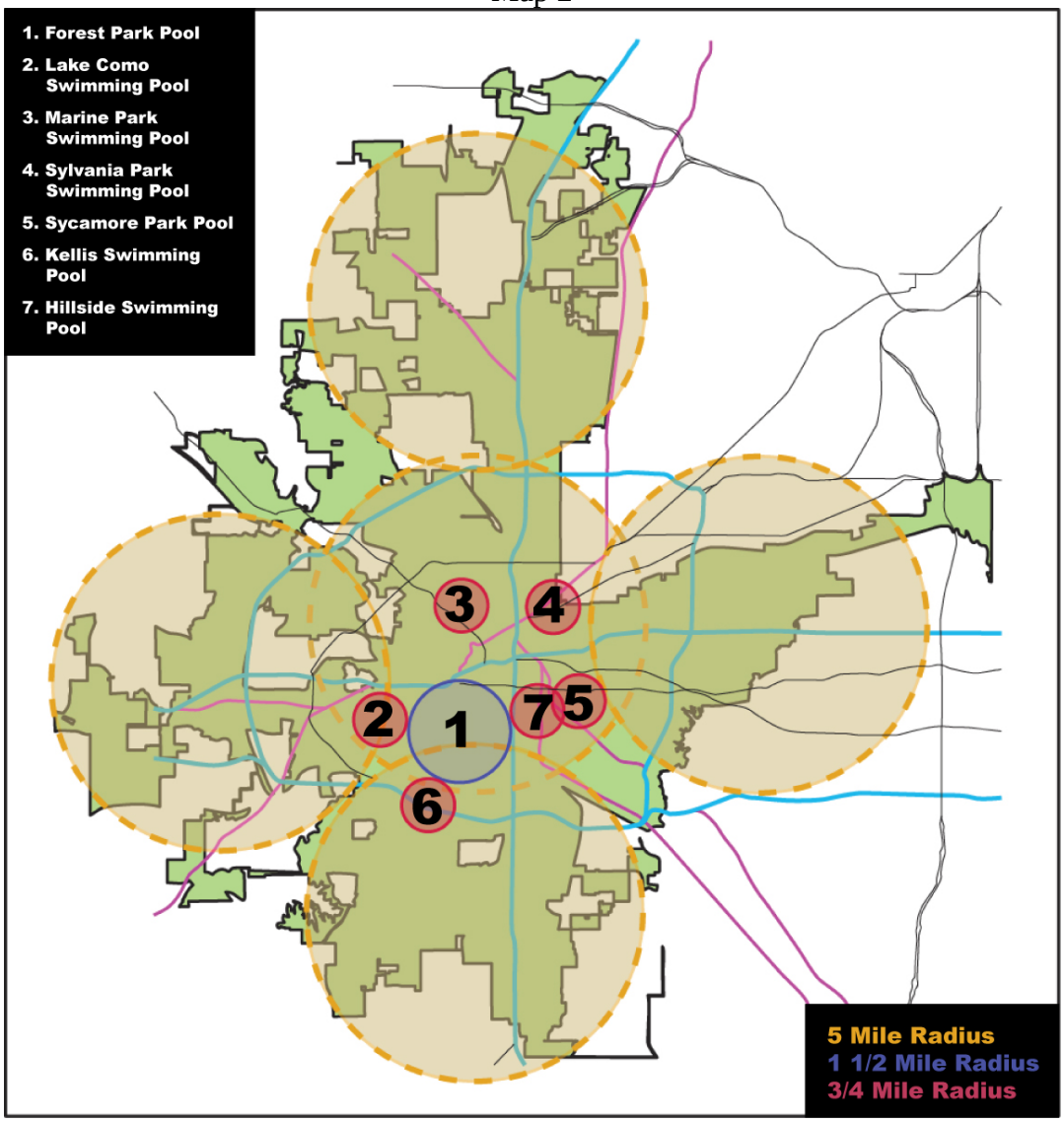
Source: Counsilman-Hunsaker

Factors that influence attendance of aquatic centers include population characteristics, including growth or decline, income, and age groups. Market studies are used to predict how relevant products, services and fees are to residents. In this section, demographics were looked at per underserved areas of the City of Fort Worth (North, South, East, and West) in addition to the Central Area Pools.

Population

The following presents a summary of areas served (Central) and underserved (North, South, East, and West) areas. The following map illustrates these analyzed areas, each with a 5-mile radius.

Map 2



City of Fort Worth

Table 9
Population by Area

Area	2000 Number (000's)	2000 Percent of Total	2007 Number (000's)	2007 Percent of Total	2012 Number (000's)	2012 Percent of Total	Average Annual Change 2000-2007 Number (000's)	2000-2007 Percent	2007-2012 Number (000's)	2007-2012 Percent
North	174.1	20.2%	215.7	22.0%	243.1	22.9%	5.9	3.1%	5.5	2.4%
South	134.5	15.6%	153.5	15.7%	166.9	15.7%	2.7	1.9%	2.7	1.7%
East	100.0	11.6%	114.3	11.7%	124.5	11.7%	2.0	1.9%	2.0	1.7%
West	227.1	26.3%	252.5	25.8%	271.1	25.6%	3.6	1.5%	3.7	1.4%
Central	227.4	26.3%	242.4	24.8%	254.2	24.0%	2.1	0.9%	2.4	1.0%
Total	863.1	100.0%	978.4	100.0%	1,059.8	100.0%	16.5	1.8%	16.3	1.6%
Fort Worth, TX	534.7		635.8		704.5		14.4	2.5%	13.7	2.1%

Claritas, Inc. 2007

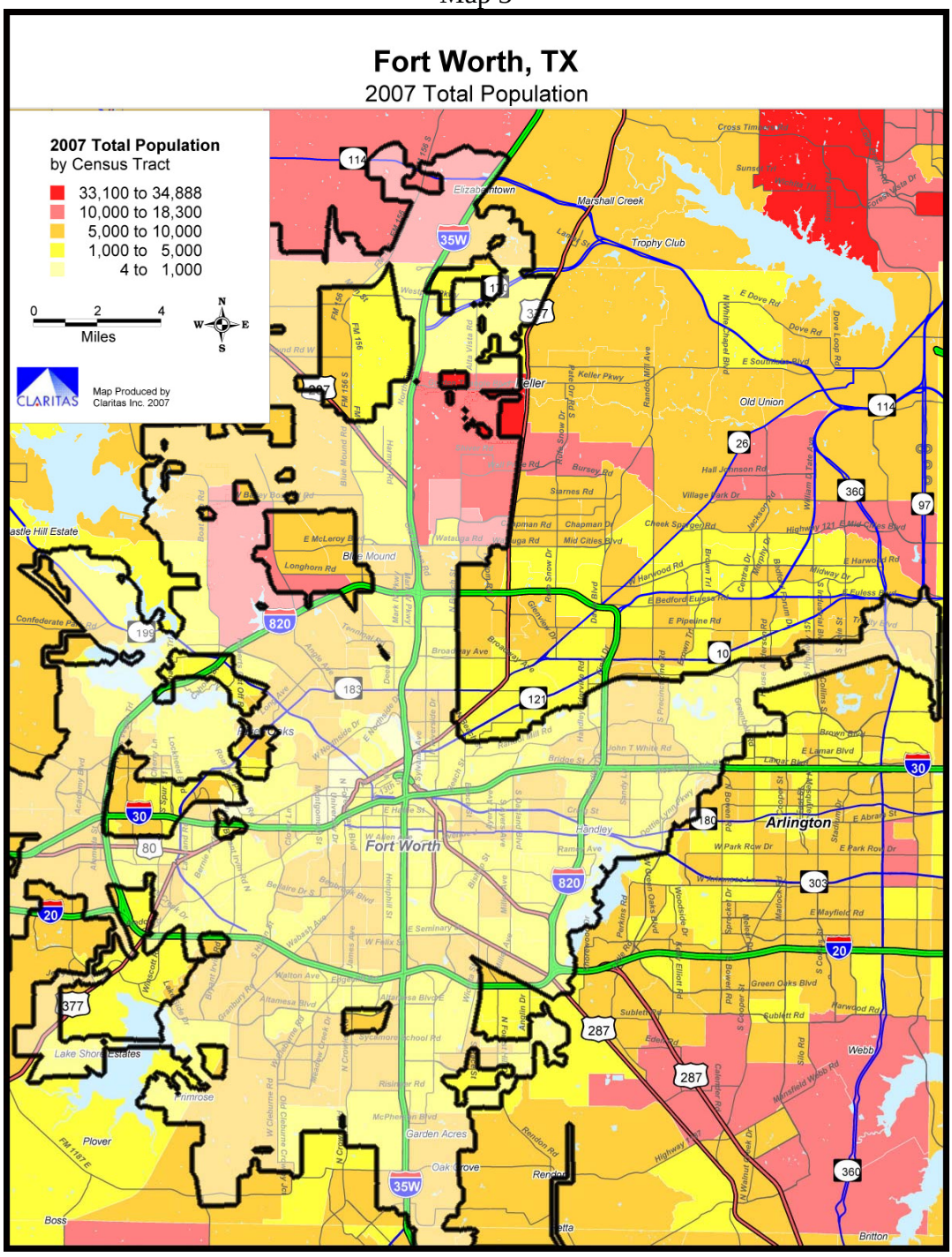
Source: Claritas, Inc.

- West market area: most populated 2007 (252,500).
- North market area: highest growth 2000-2007 (3.1%).
- North market area: projected highest growth 2007-2012 (2.4%).
- Central market area: lowest growth 2000-2007 (0.9%).
- Central market area: projected lowest growth 2007-2012 (1.0%).
- East market area: least populated (114,300).

Total Population

The following map shows 2007 total population by Census Tract for the City of Fort Worth. A Census Tract is a small area with relatively standardized demographic, social, household and fiscal characteristics. Census Tract data are significant as they provide fairly comprehensive demographic information with boundaries that do not change over time. Red areas show the greatest concentration of population followed by pink, orange, yellow, and off-white

Map 3

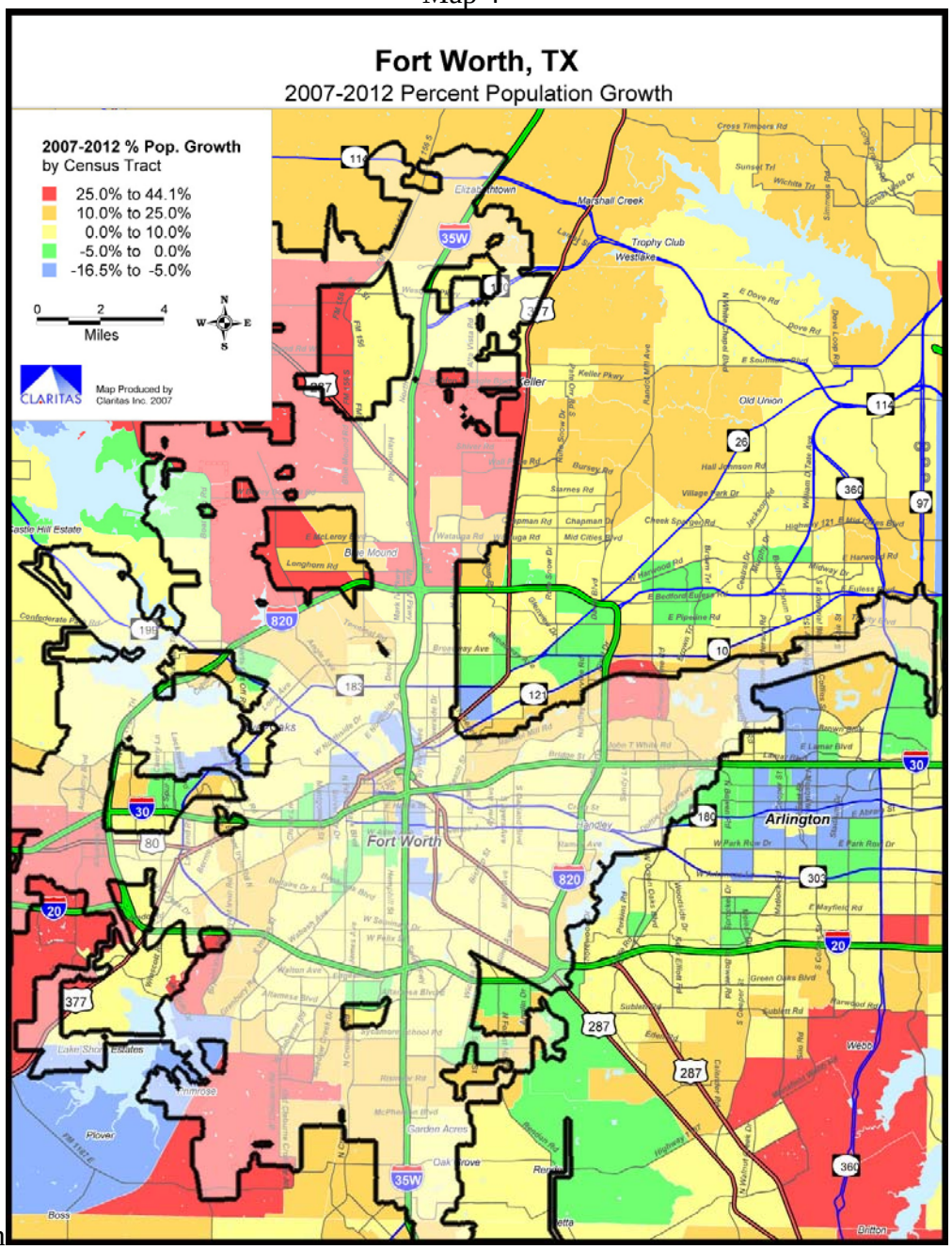


City of Fort Worth
Source: Claritas, Inc.

Population Growth

The following map shows projected population change from 2007 to 2012 for the City of Fort Worth. Red reveals highest percentage for areas of growth followed by orange and yellow. Green and blue areas show decline.

Map 4



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City of Fort Worth
Source: Claritas, Inc.

Income

To a certain degree, the likelihood of residents to use city swimming pools depends on their ability to pay admission and program fees. In the following table, the U.S. national average is set at 1.00. Index* refers to the percentage higher or lower than the national average, i.e., the North market area is 5% higher than the national average regarding resident per capita income and 33% higher regarding median household income.

Table 10
Income Characteristics by Area

Market Area	Per Capita Incomes		Median Household Incomes	
	Dollars	Index*	Dollars	Index*
North	$25,856	1.05	$63,642	1.33
South	$18,173	0.74	$44,556	0.93
East	$24,894	1.01	$43,279	0.90
West	$25,933	1.05	$42,629	0.89
Central	$15,955	0.65	$33,827	0.71
Fort Worth	$21,590	0.87	$43,366	0.91
TOTAL U.S.	$24,704	1.00	$47,837	1.00

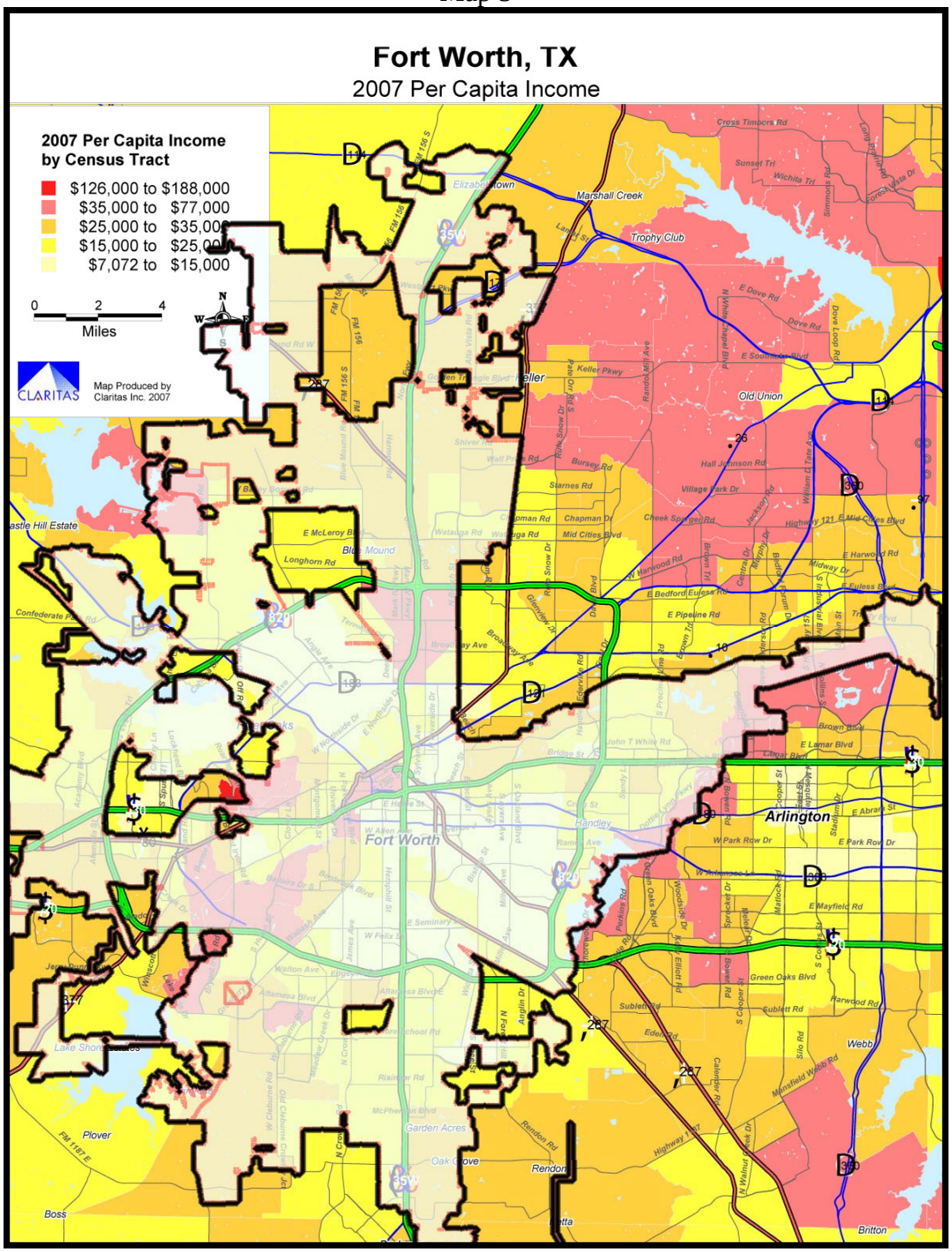
Source: Claritas, Inc.

- North market area: highest median household income (33% higher than the national average).
- Central market area: lowest per capita (35% lower than the national average) and median household income (29% lower than the national average).

Per Capita Income

The following map shows 2007 per capita income by Census Tract. Red shows highest income levels followed by pink, orange, yellow and off-white.

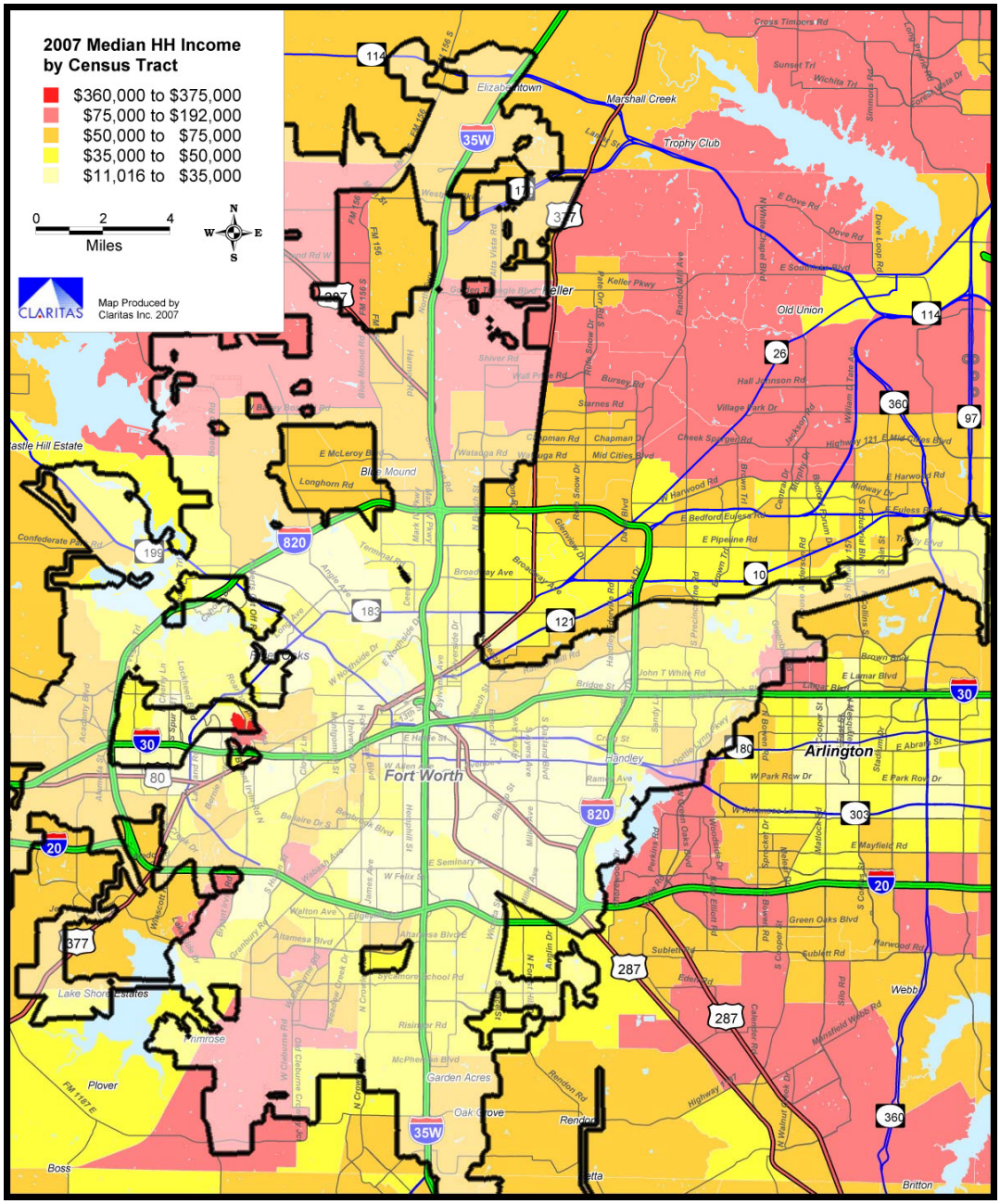
Map 5



Median Household Income

The following map shows 2007 median household income by Census Tract. Red shows highest income levels followed by pink, orange, yellow and off-white.

Map 6
2007 Median Household Income



City of Fort Worth
Source: Claritas, Inc.

Age Distribution

Age distribution is another population characteristic used to determine the type and level of use of any type of program. Research has shown that younger age groups are more likely to engage in competitive and recreational activities, while middle-age and older patrons enjoy wellness and fitness programming. The following table provides number of residents and percentage of total population for each age group. The U.S. column identifies national averages for each of those age groups.

Table 11
Age Distribution by Area

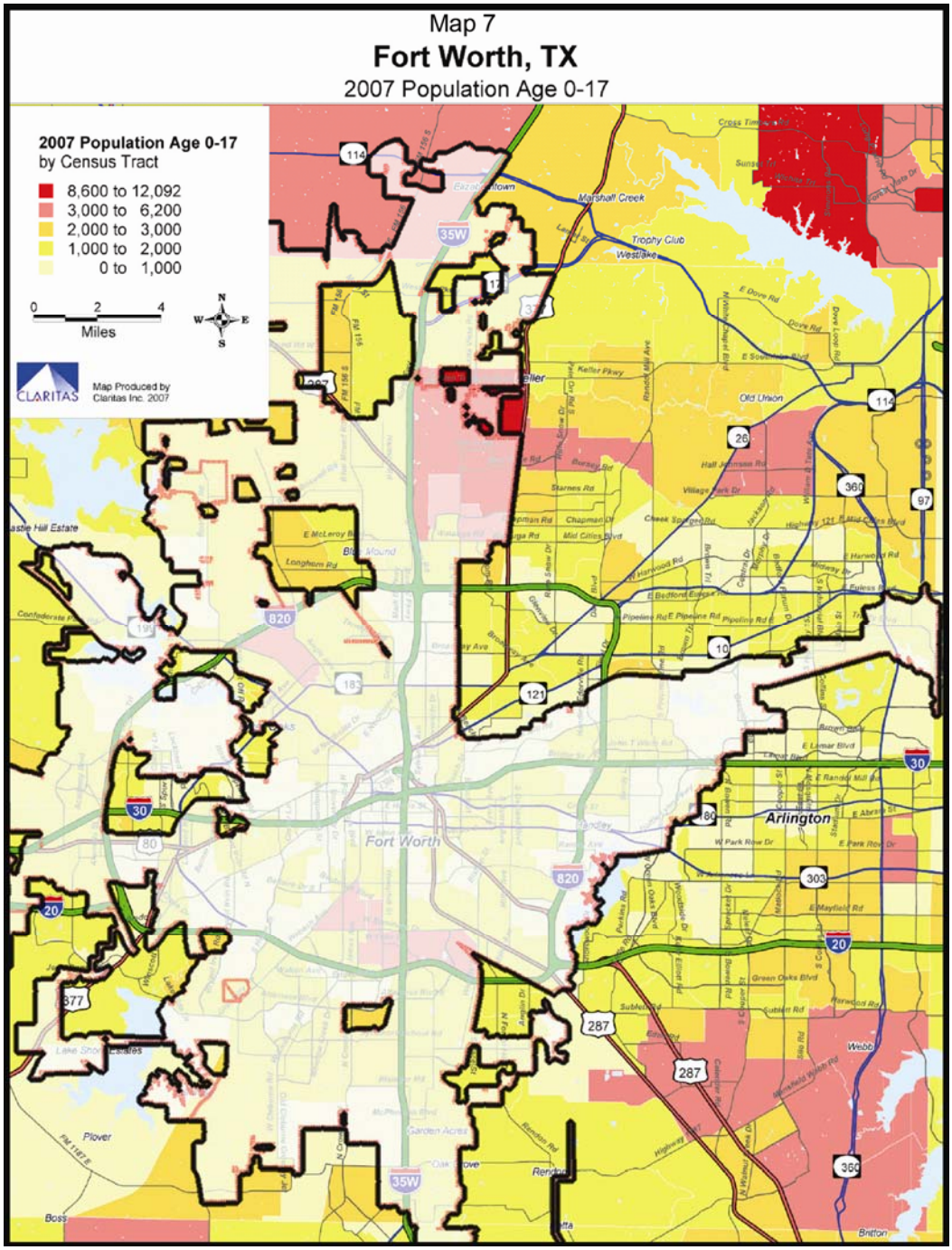
	North		South		East		West		Central		Fort Worth, TX		U.S. Age
Age Groups	#	%	#	%	#	%	#	%	#	%	#	%	Population
Under 5	19,099	8.9%	13,883	9.1%	8,879	7.8%	19,219	7.6%	22,791	9.4%	56,707	8.9%	6.7%
5 to 9	17,504	8.1%	12,299	8.0%	8,171	7.2%	17,629	7.0%	19,568	8.1%	50,023	7.9%	6.8%
10 to 14	17,063	7.9%	12,152	7.9%	7,654	6.7%	16,218	6.4%	18,346	7.6%	46,807	7.4%	7.2%
15 to 17	10,416	4.8%	7,526	4.9%	4,232	3.7%	8,975	3.6%	10,646	4.4%	26,932	4.2%	4.3%
Subtotal	**64,082**	**29.7%**	**45,860**	**29.9%**	**28,936**	**25.3%**	**62,041**	**24.6%**	**71,351**	**29.4%**	**180,469**	**28.4%**	**25.1%**
18 to 24	19,460	9.0%	14,747	9.6%	9,909	8.7%	25,923	10.3%	24,250	10.0%	63,706	10.0%	9.9%
25 to 34	30,898	14.3%	22,187	14.5%	16,904	14.8%	39,620	15.7%	37,779	15.6%	101,961	16.0%	13.6%
35 to 44	35,816	16.6%	22,430	14.6%	16,578	14.5%	35,468	14.0%	34,558	14.3%	95,827	15.1%	15.3%
45 to 54	30,630	14.2%	19,988	13.0%	15,610	13.7%	32,640	12.9%	28,728	11.9%	80,628	12.7%	14.1%
55 to 64	19,117	8.9%	14,016	9.1%	11,914	10.4%	24,281	9.6%	20,075	8.3%	54,022	8.5%	9.6%
65 to 74	9,121	4.2%	8,182	5.3%	7,720	6.8%	16,055	6.4%	12,803	5.3%	30,903	4.9%	6.4%
75 to 84	5,083	2.4%	4,735	3.1%	5,047	4.4%	11,921	4.7%	9,193	3.8%	20,737	3.3%	4.4%
85 and over	1,447	0.7%	1,331	0.9%	1,702	1.5%	4,584	1.8%	3,654	1.5%	7,501	1.2%	1.7%
TOTAL:	**215,654**	**100.0%**	**153,476**	**100.0%**	**114,320**	**100.0%**	**252,533**	**100.0%**	**242,391**	**100.0%**	**635,754**	**100.0%**	**100%**
Median Age	32.9		32.3		35.9		34.7		31.8		31.9		36.0

Source: Claritas, Inc.

- Central market area: largest number of children (71,351).
- North market area: second largest number of children (64,082).
- East market area: lowest number of children (28,936).

Age Group 0-17

The following map shows the 0-17 age group by Census Tract. Red areas reveal highest concentration of children followed by pink, orange, yellow, and off-white.



City of Fort Worth
Source: Claritas, Inc.

Weather

Given the sensitivity of water sports to weather conditions, it is appropriate to include an assessment of local weather patterns in the market analysis of the facilities. These factors are used when determining user days in the financial models.

Table 12
Weather Data
City of Fort Worth

Month	Temperatures			Precipitation Inches	Precipitation Days
	Average	High	Low		
January	41.9	53.4	30.3	1.7	7
February	46.6	58.3	34.9	2.1	7
March	55.2	67.0	43.4	2.6	7
April	64.7	75.8	53.4	3.3	8
May	71.8	82.4	67.1	4.6	9
June	79.2	90.0	68.3	3.5	7
July	83.7	95.2	72.1	2.4	5
August	83.4	95.3	71.4	2.1	5
September	76.4	87.6	65.0	3.4	7
October	66.2	78.1	54.3	3.2	6
November	55.2	66.6	43.9	2.0	6
December	45.7	57.0	34.3	1.8	7

Source: Weatherbase

The weather patterns suggested in the above figures will not inhibit participation in aquatics. In fact, highs in the 90s in the summer will promote user days.

In order to assess performance against the competition, reported is a sample of aquatic facilities that meet criteria of the scope of the project within a 20-mile radius of Fort Worth. The city's goal is not to compete for services, but to work with partners to deliver high quality programs at a reasonable cost to taxpayers. Most facilities documented offer lap swimming and recreation use. Many offer regular programming such as swim lessons, competitive swim teams, and aqua aerobics. This information is for research only and current as of Summer 2007.

Aquatic Providers 0-10 Miles

1. Wilkerson-Greines Activity Center

5101 C. A. Roberson Blvd
Fort Worth, TX
817-531-6348

Owned and operated by Fort Worth Independent School District, Wilkerson-Greines Activity Center (WGAC) is home to several Fort Worth I.S.D. high schools and hosts many local, regional and high school swim meets. FAST, a member of USA Swimming of North Texas Swimming LSC, rents pool time year-round from the district. The 1981 aquatic facility features:

- Indoor 8-lane 50 meter pool
- Movable bulkhead configures the pool for 25 yard short course (seventeen lanes) and 25 meter short course.
- Wide lanes, deep water, anti-turbulent lane ropes, overflow gutters, and a Colorado electronic timing system make this a "fast" pool for racing.
- Depth ranges from 3'6" to 13'6" under the two 1-meter and one 3-meter diving boards.
- Two underwater viewing windows provide stroke observation.
- Water temperature is maintained at levels suitable for competition and workouts.
- Also included: video equipment and grandstand

2. Lockheed Martin Recreation Association

3400 Bryant Irvin Road
Fort Worth, TX
817-732-7731

Lockheed Martin Recreation Association (LMRA) is a corporate recreation association provided for affiliate member companies. Facilities include a clubhouse with meeting rooms, ballroom, banquet hall, photo darkroom/studio,

model railroad layout, and stained glass shop. The Sports and Fitness Center includes fitness, basketball, volleyball, racquetball, and karate. Outdoor facilities include two softball fields, one baseball field, driving range, four lighted tennis courts, two soccer fields, two sand volleyball courts, a large picnic area, miniature golf course and children's playground. The aquatic facility offers swim lessons and includes:

- Outdoor 8-lane 50 meter pool
- 17 foot diving well
- Tot area
- Concessions
- Red Cross certified lifeguards

Hours

May 25th - Labor Day (except August 27- August 31)

Monday – Friday	11am – 7:30pm
Saturdays	Noon – 7:30pm
Sundays	1pm – 7:30pm

Fees

Daily Member	$3.50
Daily Guest (Sponsored)	$3.75
Daily Nonmember	$4.50
20-Visit Member Card	$60
20-Visit Nonmember Card	$70
Three-Years Old & Under	FREE (members, guests, nonmembers)
SEASON PASSES:	
Member Individual	$85
Member Family	$215
Nonmember Individual	$115
Nonmember Family	$268

Private Parties

The pool can be reserved for 2 hours after 7:30 pm (except Tuesday & Thursday)

Member/Sponsored	$3 each (Min. $250)
Nonmember/Organization	$4 each (Min. $250)
Additional Hours	$150/Hour

LMRA is provided for the following affiliate member companies:

Bell Helicopter
City of Fort Worth
Cook Children's Medical Center
Federal Employees
First Command Financial
Fort Worth Country Day School
Fort Worth ISD
Frank Kent Motor Co.
Harris Methodist/Texas Health Services

Hillard Autopark
InterConnect Wiring
Medical Plaza
North Hills Hospital
Parker Stratoflex
RadioShack
Sewell Lexus
Tarrant County MH/MR
Tarrant County
University of North Texas Health Science Center
White Settlement ISD
Wm. Rigg Company

3. Ridglea Country Club

3700 Bernie Anderson Ave.
Fort Worth, TX
817-732-8111

Ridglea Country Club includes a golf course, fitness center, restaurant, banquet facility, tennis, and swimming. Swimming instruction, group and private, is available for every level of skill with special emphasis on a summer youth program including a swim/dive team with approximately 300 children participating annually. The aquatic facility includes:

- Outdoor competitive pool
- Sunning and outdoor dining areas

Hours

Tuesday – Saturday	10:00am – 8:00pm
Sunday	Noon – 8:00pm

Fees

Private Membership

Aquatic Providers 10-15 Miles

4. Chisholm Aquatic Center

2200 Norwood Drive.
Hurst, TX
817-788-7250

The City of Hurst is responsible for the operation and programming of two municipal swimming pools: Chisholm Aquatic Center and Central Aquatics Center. Chisholm Aquatic Center is in a park setting and includes:

- Zero-beach entry pool
- Tumble buckets
- Raindrop water feature
- Pipe falls

- 2 waterslides
- Diving well with two diving boards
- Children's pool with play feature
- 6-lane pool for lap swimming
- Bathhouse
- Concessions
- Picnic plaza with three pavilions
- Shade structures
- Sand volleyball

Hours

Late May – Labor Day

Monday – Friday	Noon – 8pm
Saturday	10am – 6pm
Sunday	1pm – 6pm

Fees

12 months & under	FREE (residents and nonresidents)
1 to 64	$1
65+	FREE (residents and nonresidents)
Nonresident	$5
SEASON PASSES:	
Individual	$25
Nonresident Individual	$75

5. Central Aquatics Center

715 Mary Dr
Hurst, TX
817-788-7327

The City of Hurst's Central Aquatics Center features many water-based components that include:

- Zero-beach entry pool
- Tumble buckets
- Raindrop water feature
- Pipe falls
- 3 Waterslides with catch pool
- Children's pool with participatory play feature
- Bathhouse with concessions
- Picnic plaza with 2 pavilions and shade structures
- Sand volleyball

Hours
May 25 – August 26

Monday – Friday	Noon – 8pm
Saturday	10am – 6pm
Sunday	1pm – 6pm

Fees

12 months & Under	FREE (residents and nonresidents)
1 to 64	$1
65+	FREE (residents and nonresidents)
Nonresident	$4
SEASON PASSES:	
Individual	$25
Nonresident Individual	$75

6. Bedford Splash at Boys Ranch

2801 Forest Ridge Drive
Bedford, TX
817.952-2380

- Tot Pool
- Leisure Pool with zero-beach entry
- 6-Lane 25 Yard Pool
- Participatory Play Feature
- Raindrop
- current channel,
- lily pad walk
- two slides
- tipping coconut palm trees
- Waterslide
- Swirl Waterslide
- Concession Stand
- Rental Pavilion

Hours

Mon/Wed/Thurs/Fri/Sat	Noon – 7:00PM
Tuesday	Noon – 9:00PM
Sun	Noon – 6:00PM

Fees

	Resident	**Nonresident**
Adult 18+	5.00	6.50
Child 3-17	4.00	5.00
2 & under	Free	Free

SEASON PASSES:

	Resident	Nonresident
Individual	45.00	75.00
Family (4)	100.00	200.00

7. NRH$_2$O Family Water Park

9001 Grapevine Hwy.
North Richland Hills, TX
817-427-6500

Opened in 1995, this 17-acre family water park in North Richland Hills offers:

- Wave pool
- 3 Waterslides for guests at least 48" tall
- 3 double rider inner tube slides
- 4-lane mat racer
- Uphill 7-story water coaster
- Giant tipping beaker
- Lazy river
- Children's area with slide and chutes, balancing net and lily pad water walk
- Group pavilion with seating for more than 200
- Catering options Concessions
- Gift shop
- Free parking
- Inner tubes are free on a first come, first serve basis.

Fees:

Daily over 48"	$21.99
Under 48"	$17.99
2 & under	FREE
Season Pass	$75

Hours:

Mon – Thurs	10 am – 6 pm
Fri	10 am – 10 pm
Sat	10 am – 8 pm
Sun	Noon – 8 pm

8. Burleson Community Center Pool

500 Chisenhall Park Lane
Burleson, TX
817-295-9571

Home of the Barracuda Swim Team, this municipal pool features:

- Outdoor 25 meter pool

Hours

Daily 1pm – 7pm (May 27 – July 4)
Daily 1pm – 6pm (July 5 – Aug. 13)

Fees

Under 18	$1.25
Over 18	$1.50
Nonresident under 18	$1.50
Nonresident over 18	$2
SEASON PASSES:	
Individual	$32
Family	$78
Nonresident individual	$40.50
Nonresident family	$98

Aquatic Providers 15-25 Miles

9. Allen Bolden Swimming Pool

2805 Matlock Road
Arlington, TX
817-472-8950

The City of Arlington is responsible for the operation and programming of seven municipal swimming pools: Allen Bolden Swimming Pool, Woodland West Swimming Pool, Randol Mill Swimming Pool, Bad Konigshofen Outdoor Family Aquatic Center, Helen Wessler Outdoor Pool, Howard Moore Outdoor Play Pool, and Hugh Smith Indoor Pool.

Allen Bolden Swimming Pool offers diving lessons, junior guard lessons and private swim lessons. Features include:

- Outdoor 50 meter L-shaped pool
- 3-meter and 1-meter diving boards
- Wading pool for children under 5
- Handicap accessible

Hours
May 26 – August 24

Monday – Thursday	1pm – 7pm
Friday/Saturday	Noon – 7pm
Sunday	1pm – 6pm

Fees

12 months & under	FREE (resident and nonresident)
13 months – 11 yrs	$3
12+	$3.50
Nonresident:	
13 months – 11 yrs	$3.50
12+	$4

SEASON PASSES: (10% discount on purchase of 3 or more passes)

Less than 48”	$45
48”+	$55
Nonresident:	
Less than 48”	$65
48”+	$75

10. Woodland West Swimming Pool

3200 Norwood Lane
Arlington, TX
817-277-0582

Adjacent to the Dottie Lynn Recreation Center, this City of Arlington municipal pool features:

- Outdoor rectangular pool
- Bathhouse
- Vending machines
- Pavilion for rental

Hours
May 26 – August 24

Monday – Friday	10am – 6pm
Saturday	Noon – 7pm
Sunday	1pm – 6pm
Tuesday/Thursday	8pm – 10pm

Fees

12 months & under	FREE
13 months – 11 yrs	$3
12+	$3.50
Nonresident:	
12 months & under	FREE
13 months – 11 yrs	$3.50

12+ $4
SEASON PASSES: (10% discount on purchase of 3 or more passes)
Less than 48” $45
48”+ $55
Nonresident:
Less than 48” $65
48”+ $75

11. Randol Mill Swimming Pool

1924 W. Randol Mill Road
Arlington, TX
817-275-7542

The City of Arlington’s Randol Mill Pool features:

- Zero-beach entry pool
- Current channel
- Vortex
- Kiddie pool and tot area
- Tumble buckets
- Raindrop spray feature
- 25-foot waterslide
- Current channel
- Party pavilions
- Concessions

Hours
May 26 – September 3 (closed August 27 – August 31)
Monday – Friday 10am – 7pm
Saturday Noon – 7pm
Sunday 1pm – 6pm
Fees
12 months & under FREE
13 months – 4 yrs $4.50
5 – 11 yrs. $5
12+ $5.50
Nonresident:
12 months & under FREE
13 months – 4 yrs $6.50
5 – 11 yrs. $7
12+ $7.50
SEASON PASSES: (10% discount on purchase of 3 or more passes)
Less than 48” $45
48”+ $55
Nonresident:
Less than 48” $65
48”+ $75

12. Bad Konigshofen Outdoor Family Aquatic Center

2800 West Sublett Road
Arlington, TX
817-459-5223

The City of Arlington's agrarian style aquatic center, located in SJ Stovall Park, offers the design of a small region of Germany. The center offers swim lessons, birthday parties and rentals for special occasions. Features include:

- 4-lane 25 meter pool
- Zero-beach entry leisure pool
- 1-meter diving board
- 2 waterslides
- Shade pavilions
- Bathhouse
- Concessions
- Interactive sprayground (pad)

Hours

May 26 – September 3 (closed August 27 – August 31)

Monday – Saturday	Noon – 7pm
Sunday	1 pm – 6pm

Fees

12 months & under	FREE
13 months – 4 yrs	$4.50
5 – 11 yrs.	$5
12+	$5.50
Nonresident:	
12 months & under	FREE
13 months – 4 yrs	$6.50
5 – 11 yrs.	$7
12+	$7.50

SEASON PASSES: (10% discount on purchase of 3 or more passes)

Less than 48"	$45
48"+	$55
Nonresident:	
Less than 48"	$65
48"+	$75

13. Helen Wessler Outdoor Pool

2310 Greenway
Arlington, TX
817-275-7561

The City of Arlington's Helen Wessler Park was renovated in 1996 and features:

- Shallow water play pool
- Participatory play feature
- Bathhouse
- Vending machines

Hours

May 26 – August 19

Monday/Wednesday/Friday/Saturday	Noon – 7pm
Tuesday/Thursday	10am – 7pm
Sunday	1pm – 6pm

Fees

12 months & under	FREE
13 months – 11 yrs	$3
12+	$3.50
Nonresident:	
12 months & under	FREE
13 months – 11 yrs	$3.50
12+	$4

SEASON PASSES: (10% discount on purchase of 3 or more passes)

Less than 48"	$45
48"+	$55
Nonresident:	
Less than 48"	$65
48"+	$75

14. Howard Moore Outdoor Play Pool

1999 Bever Blvd.
Arlington, TX
817-275-0712

The City of Arlington's Howard Moore Outdoor Play Pool, located in Howard Moore Park, was renovated in 2003 and includes:

- Shallow water play pool
- Participatory play feature
- Bathhouse
- Vending machines

Hours

May 26 – August 19

Monday/Wednesday/Friday	10am – 7pm
Tuesday/Thursday/Saturday	Noon – 7pm
Sunday	1pm – 6pm

Fees

12 months & under	FREE
13 months – 11 yrs	$3
12+	$3.50
Nonresident:	
12 months & under	FREE
13 months – 11 yrs	$3.50
12+	$4

SEASON PASSES: (10% discount on purchase of 3 or more passes)

Less than 48”	$45
48”+	$55
Nonresident:	
Less than 48”	$65
48”+	$75

15. Hugh Smith Indoor Pool

1815 New York Ave.
Arlington, TX
817-275-0513

The City of Arlington’s year-round indoor municipal pool offers swim lessons, aqua exercise and Friday Night Family Nights. Features of the facility include:

- Indoor 25 yard pool
- 1 meter diving board
- Handicap accessible

Hours

Day	Open Swim	Lap Swim
Monday	10am-11:30am	11:30am-12:15pm, 6pm-7pm
Tuesday	10am-11:30am	11:30am-12:30pm
Wednesday	10am-11:30am	11:30am-12:15pm, 6pm-7pm
Thursday	10am-11:30am	11:30am-12:30pm
Friday	10am-11:30am, 6pm-8pm	11:30am-12:15pm
Saturday	1pm-5pm	5pm-6pm
Sunday	3pm-5pm	

Fees

Under 2	FREE
2 – 11 yrs	$3
12+	$3.50
Guest	$6

16. Keller Pointe

405 Rufe Snow Drive
Keller, TX
817-743-4FUN

The City of Keller is responsible for the operation and programming of two municipal swimming pools (one outdoor and one indoor) bundled at Keller Pointe.

Indoor pool features:

- Leisure pool
- 3 Lap lanes
- Waterslide
- Play feature
- Spray features
- Spa
- Vortex

Hours	**Lap Hours**	**Open Swim**
Monday – Friday	5am – Noon	3:30 pm – 8pm
Saturday		Noon – 8pm
Sunday		Noon – 5:30pm

Outdoor pool features:

- Leisure pool
- Waterslides
- Double vortex
- Current channel
- Spray features
- Bathhouse
- Concessions

Hours

Monday – Friday	Noon – 8pm
Saturday	11am – 8pm
Sunday	11am – 5:30pm

Fees

2 & under	FREE
Youth 3-15	$7
Adult 16-61	$8
Senior 62+	$7
Family	$17
Nonresident 3-15	$9
Nonresident 16-61	$10
Nonresident senior	$9
Nonresident family	N/A
ANNUAL PASSES:	
Youth 3-15	$209
Adult 6-61	$354
Senior 62+	$244
Family	$557
Nonresident 3-15	$230
Nonresident 16-61	$450
Nonresident senior	$310
Nonresident family	$710

17. Midway Swimming Pool

300 W. Midway
Euless, TX
817-685-1676

The City of Euless is responsible for the operation and programming of three municipal swimming pools and one sprayground: Midway Swimming Pool, South Euless Swimming Pool, and Wilshire Swimming Pool. The pools offer swimming instruction, fitness classes, and recreational swimming. Midway Pool is also used for Special Olympic training and the local fire department response training. Located in Midway Park adjacent to an indoor recreation center, Midway Swimming Pool was built in 1950, renovated in 1990, and features:

- Outdoor rectangular pool
- Tube waterslide
- Picnic tables

Hours

Monday – Saturday	1pm – 8pm
Sunday	2pm – 6pm

Fees

Daily Swim $1

18. South Euless Swimming Pool

600 S. Main Street
Euless, TX
817-685-1677

Located in S. Euless Park, this 1972 municipal facility features:

- Outdoor rectangular pool
- Tube waterslide
- Picnic tables
- Sprayground built in 2005

Hours

Monday, Wednesday, Friday	1pm – 8pm
Tuesday, Thursday	1pm – 5pm
Saturday	1pm – 8pm
Sunday	2pm – 6pm

Sprayground Hours

Monday - Saturday	9am – 8pm
Sunday	Noon - 6pm

Fees

Daily Swim $1

19. Wilshire Swimming Pool

315 Sierra Dr.
Euless, TX
817-685-1678

The City of Euless swimming pool in Wilshire Park was constructed in 1972 and features:

- Outdoor rectangular pool
- Tube waterslide
- Picnic tables

Hours

Monday, Wednesday, Friday	1pm – 8pm
Tuesday, Thursday	1pm – 5pm
Saturday	1pm – 8pm
Sunday	2pm – 6pm

Fees

Daily Swim $1

20. Tyre Outdoor Pool

2327 Tyre Street
Grand Prairie, TX
972-660-6269

The City of Grand Prairie is responsible for the operation and programming of four municipal swimming pools and one sprayground: Bowles Pool, Tyre Pool, McFalls Pool, Splash Factory Water Playground, and Kirby Creek Natatorium.

Built in 1955, Tyre Outdoor Pool is currently used for recreation, swimming instruction, and pool parties. The pool originally had five competitive swim lanes but is no longer used for competitive swimming. Facility includes:

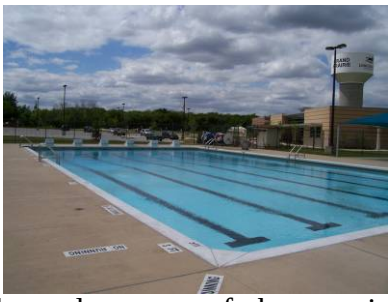
- Outdoor 25 meter pool
- Low diving board

Hours
Daily 1 pm - 6 pm

Fees
Daily Swim $1

21. Bowles Outdoor Pool

2714 Graham Street
Grand Prairie, TX
972-264-4872



Built in 1978, Bowles Outdoor Pool was renovated in 2001 including the pool pump, filter, exposed piping in the mechanical area, surge tank equipment, main drains and main drain piping, suction piping from surge tank, and the pressure piping. Additional upgrades during the 2001 renovation included replacement of the pool deck, replacement of the exterior fence, addition of a fabric shade structure, bathhouse renovation, and a ramp from the bathhouse to the pool deck. Facility features include:

- Outdoor 6-lane 25 meter pool
- Low diving board
- Starting blocks
- Wall targets, lane markings, buffer lanes

Hours
Daily 1 pm - 6 pm
Fees
Daily Swim $1

22. McFalls Outdoor Pool

505 Dickey Road
Grand Prairie, TX
972-264-1203

Built in 1958, McFalls Outdoor Pool is currently used for recreation, swimming instruction, swim team training, swim team meets, and pool parties. The facility features:

- Outdoor 6-lane 25 meter pool
- 1 meter diving board
- Starting blocks, wall targets, lane markings, buffer lanes

Hours

Daily	1pm – 6pm
Monday/Wednesday	6pm – 7:30pm

Fees

Daily $1

23. Splash Factory Water Playground

601 East Grand Prairie Road
Grand Prairie, TX
972.266-5272

Located behind Charley Taylor Recreation Center, Splash Factory features age-specific play areas and six touch buttons that allow children to interact with the play features. To conserve water, the city installed a swimming filter and chlorination system that re-circulates water through the park. Certified lifeguards monitor and enforce age requirements for the different play areas that include:

- Water wall
- Ground sprays
- Play structures
- Magic touch water gun
- Spray cannons
- Power geysers

Hours

Monday – Friday	9am – 6pm
Saturday/Sunday	1pm – 6pm

Fees

Children $1

24. Kirby Creek Natatorium

3201 Corn Valley Road
Grand Prairie, TX
972-263-8174

The City of Grand Prairie's Kirby Creek Natatorium, built in 1978, is ADA accessible and open year-round. The pool was originally an outdoor pool but enclosed in 1987. A concrete deck surrounds the pool with a Kool Deck finish. The pool is currently used for recreation, swimming instruction, high school swim team training, water aerobic/fitness classes and pool parties. The facility features:

- Indoor 6-lane 25 meter pool
- Diving board
- Starting blocks, wall targets, lane markings, buffer lanes
- Seating for parties

Hours

Monday – Thursday	1pm – 5pm
Friday/Saturday	1pm – 6pm

Fees

Daily Swim	$2
30-Visit Pass	$40
ANNUAL PASSES:	
Individual	$100
Family of 4	$250

25. Dove Pool

1509 Hood Lane
Grapevine, TX
817-410-8140

The Aquatics Division of the City of Grapevine is responsible for the operation and programming of two municipal swimming pools: Dove Pool located in North Grapevine, and Pleasant Glade Pool located in South Grapevine. Both pools are outdoor facilities with programming that offers swim lessons, swim team, lap swimming, open swim, and rentals. Features of Dove Pool include:

- Outdoor lap pool
- Diving board
- Kiddie pool with zero-beach entry
- Raindrop
- Shade structures

Hours
Memorial Day – Labor Day

Monday-Friday	Noon – 5pm and 7:30pm – 9:30pm
Saturday	10am – 7pm
Sunday	1pm – 6pm

Fees

24 months & under	FREE
Daily Swim	$1.50
25-Visit Pass	$30
SEASON PASSES:	
Individual	$40
Family	$80

26. Pleasant Glade Pool

1805 Hall Johnson Road
Grapevine, TX
817-410-3470

Pleasant Glade Pool of the City of Grapevine includes:

- Outdoor 6-lane pool
- Kids pool with water features
- Shade structures

Hours
Memorial Day – Labor Day

Monday-Friday	Noon – 5pm and 7:30pm - 9:30pm
Saturday	10am – 7pm
Sunday	1pm – 6pm

Fees

24 months & under	FREE
Daily	$1.50
25-Visit Pass	$30
SEASON PASSES:	
Individual	$40
Family	$80

27. Alfred J. Loos Natatorium

3815 Spring Valley Rd.
Addison, TX 75244
972-888-3191

About an hour from Fort Worth is Loos Natatorium owned and operated by Dallas ISD. Loos has been included in this section

because it is the only 8-lane 50 meter indoor pool located in the Dallas area. This competition pool is home of the Dallas Mustangs Swim Team and Masters Swim Team. The facility features:

- Indoor 8-lane 50 meter pool
- Bulkhead that can configure the pool as two 25 yard courses. During the fall and winter (short-course season), Loos is divided into two, 8-lane 25 yard pools. During the spring and summer the pool is "expanded" to its 50 meter length for long-course workouts.

Fees
Daily Swim $2

Hours
Limited

College Pools

28. Texas Christian University.

TCU Student Recreation Center
3005 Stadium Drive
Fort Worth, TX 76129

- Indoor 25 Yard Pool
- Diving well with 1 meter and 3 meter boards

Hours

Indoor:	
Mon-Fri	7:30AM – 9:30AM
	11AM – 2PM
	5:30PM – 9PM
Sat	10AM – 6PM
Sun	1PM – 8PM
Outdoor:	
Mon-Fri	Noon – 6PM
Sat	10AM – 6PM
Sun	1PM – 6PM

Hours may be adjusted due to TCU Swim Team events.

Fees
Community Memberships:
Annual Membership includes Recreation Center

Individual (18+)	$600
Spouse	$420
Dependent (16-24)	$420
Child	$10

Guest Pass:
Members can sponsor up to two guests (18+) per visit. Guest must remain with sponsoring member at all times. Guests may not bring children.
$5 per guest (All day access)
$20 per guest (Week access)

Locker Rental
Full Length (5 ft.) available for $120.00/year.
Half Length (30 inches) available for $60.00/year.

Programs
Private Swim Lessons: Lessons can be arranged for either an individual or two individuals. All lessons are 30 minutes in length.
Cost:
$12.00 single individual
$20.00 two individuals
First Aid w/CPR
Community CPR
Lifeguarding (must be 15 years of age+)
Swim for your Life

29. Tarrant County College - NE Pool
828 Harwood Road
Hurst, TX 76054
817-515-6634

Recreational Swim and Fitness Club can be used by the community on a limited basis and includes:

- 8-lane 25 Yard Indoor Pool
- Weight Room
- Racquetball Courts
- Full sized Gym

Fees

Individual	$66.00 per semester

Hours

Mon/Tues/Thurs	7:00PM – 9:00PM
Wed/Fri	7:30PM – 8:30PM
Sat	Noon - 1:30PM

Programs
Swim Lessons for all ages
Water Aerobics
White water canoeing
Kayaking

Basic Sailing
Water Exercise
SwimNation Aquatics Program (member of USA SWIMMING)

HOA Pools

30. Westview HOA
Pool, water-wall fountains and landscaping.
Texas/Henderson intersection

31. Sunset **Pointe HOA**
Master Planned Community with pool.
Summer Creek/Leafy Trail intersection

32. Chateaus of Fossil Creek HOA
Pool
3400 Clubgate Dr
Fort Worth, TX

33. Summer Creek Ranch HOA
Swim club with waterslides, splash park and community center.
Located in Fort Worth
Near Interstate 35W and Interstate 20

34. Ashford Park HOA
Pool and cabana
F.M. 1187 and Oak Grove Road.

35. Robson Ranch HOA
Two outdoor swimming pools, an indoor pool with lap lanes, a multi-purpose gymnasium, jetted tubs, dry and wet saunas,
6 miles south of Denton off Interstate 35W and Exit 79 (Robson Ranch Road).

36. Chisholm Springs HOA
Club house, pool and fitness center
125 Cattleman's Creek Road in Newark.
Interstate 35 north from Fort Worth to Highway 287 north. 11 miles, left at Ramhorn Hill Road. Turn left to Chisholm Springs.

37. Highland Meadows Estates HOA
Pool
701 Creek Bluff Dr
Keller, TX 76248

38. Castlewood HOA
Pool
3420 Fairfield Ln
Lewisville, TX

39. Hills of Monticello HOA
Pool
655 N Park Blvd
Grapevine, TX

40. Hulen Heights HOA
Swim Club featuring junior Olympic sized pool and covered toddler pool.
Interstate 20 to Hulen Street, right on Columbus Trail and left on Hosta Way.

YMCA Pools

41. YMCA
2400 E. Berry St.
Fort Worth, TX
817. 531.2738
Outdoor Pool

42. YMCA
512 Lamar St
Fort Worth, TX
817.332.3281
Indoor pool

43. YMCA
1701 NE 36th St
Fort Worth, TX
817. 624.9791
Indoor pool

44. YMCA
1500 Sandy Ln
Fort Worth, TX
817. 451.8276
Outdoor pool

45. YMCA
6200 Sand Springs Rd
Fort Worth, TX
817. 738.9241
Outdoor pool

46. YMCA
8201 Calmont Ave
Fort Worth, TX
817. 244.4544
Outdoor pool

47. YMCA
8250 Mccart Ave
Fort Worth, TX
817. 346.8855
Indoor and Outdoor Pools

48. YMCA
4750 Barwick Dr
Fort Worth, TX
817. 292.9612
Outdoor pool

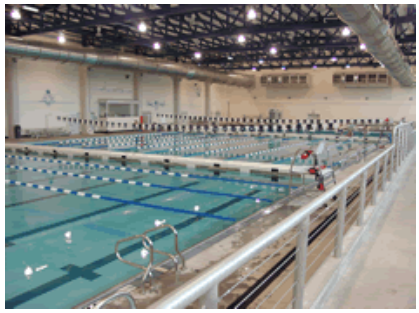
49. YMCA
5315 Boat Club Rd
Fort Worth, TX
817.237.7237
Outdoor pool

50. YMCA
5350 Basswood Blvd
Fort Worth, TX
817. 581.9280
Outdoor pool

ISD Pools

51. Allen ISD Natatorium
Allen High School
Rivercrest Blvd. & Exchange Parkway
Allen, TX
214-509-4770

Indoor 25 yards by 25 meters



52. Frisco ISD Natatorium
N County Rd & Meadow Hill Dr.
Frisco, TX 75034
469-633-6160

Indoor 50 meter

53. Hurst-Euless-Bedford ISD Natatorium
Trinity H.S. Natatorium
500 N. Industrial Blvd.
Euless, TX
817-571-0271

54. Grapevine-Colleyville ISD Natatorium
2305 Pool Rd
Grapevine, TX 76051

Indoor 25 yards by 25 meters

55. Keller ISD Natatorium
Keller H.S.
1000 Bear Creek Parkway
Keller, TX 76248

Indoor 50 meter pool

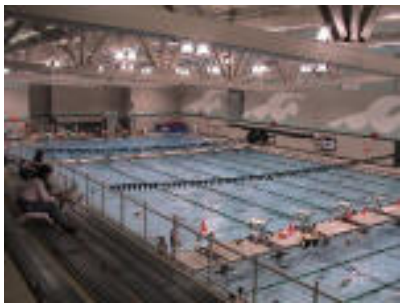
56. Flower Mound - LISD Natatorium
1776 Timber Creek Rd
Flower Mound, TX 75028

57. The Colony - LISD Natatorium
5729 Memorial Dr
The Colony, TX 75056

58. Mansfield ISD Natatorium
1001 N Holland Rd
Mansfield, TX 76063

Indoor 50 Meter
1 Meter Dive
3 Meter Dive

59. Carroll ISD Natatorium
1501 W Southlake Blvd
Southlake, TX 76092



Indoor 50 Meter
(2) 1 meter Springboards
(2) 3 meter Springboards

60. Dallas-Highland Park HS Pool
4220 Emerson Ave
Dallas, TX 75205

61. Dallas-Carrollton-Farmer's Branch ISD Natatorium
1334 Valwood Pkwy
Carrollton, TX 75006

Outdoor Water Parks

1. Bahama Beach
1895 Campfire Circle
Dallas, TX 75232

Bahama Beach consists of an interactive kids' water play area, tube slides, body slides, mat racing slide, lazy river, and concessions.

Fees:
Daily over 48" $11.99
Under 48" $7.99
2 & under FREE
Season Passes $49.99

Hours:
Mon – Sat 10:30am – 6:00pm
Sun Noon – 6:00pm

2. Hawaiian Falls Mansfield

This medium sized waterpark in Mansfield, Texas opened on Memorial Day Weekend, May 2008, the waterpark sits on 14 acres on Heritage Parkway and Texas Highway 360. It consists of 12 water slides, a lazy river, an interactive water treehouse, a football-field size wave pool, and a children's activity pool, and food stands. The park costed roughly $12 million and was built by David Busch Hawaiian Falls Waterparks in conjunction with the City of Mansfield. Hawaiian Falls Waterparks signed a 40-year lease with the City of Mansfield to operate the park.

Fees:

Daily over 48" $17.99
Under 48" $9.99
2 & under FREE
Senior Passes $9.99
Cooler Fee $10.00

Hours:

Mon – Fri 10:30am – 7:00pm
Sat 10:30am – 6:00pm
Sun 12:00am – 7:00pm

Attractions include:

- Waikiki Beach -- a football-field size wavepool.
- The Maui Wowie Slide Complex -- a slide complex feature 4 body slides.
- The Blowhole Bowl -- a funnel slide.
- Pipeline --two tube slides (one blue and one green). Pipeline: Monsoon is an entirely enclosed blue tube slide. Pipeline: Typhoon is a partially enclosed, partially open tube green tube slide.
- Keiki Cove -- an interactive children's water treehouse filled with fountains, slides, climbing nets, water jets, and a giant bucket that drops gallons of water every few minutes.
- The Pineapple Express -- a 4 lane downhill racing slide.
- The Kona Kooler -- a circular pathed lazy river with zero entry level beach.
- The Coconut Sprayground -- an interactive children's area filled with fountains and water elements.
- Honolulu Lulu -- three body slides.
- Pineapple Pete's Island Cafe -- a small cafe that serves a variety of food choices, including Pizza Hut pizzas and other snacks.
- Davy Jones Lockers -- a small gift shop that rents lockers and sells a few other items.

3. Hurricane Harbor

1800 E Lamar Blvd
Arlington, TX 76006
817.265.3356

Waterpark includes:

- 300 foot speedway
- 2 twisting flume waterslides
- 7-story tower waterslide
- Lazy river
- Raging rapids
- High speed slide barrels
- One-million-gallon activity pool with geysers, fountains, and waterfalls
- Carpeted sun-tanning deck
- One-million-gallon wave action pool
- Flow Rider
- 2 enclosed slides that wrap around each other down a 77-foot tower
- 530 foot twisting slide
- Flexible toboggan ride races down 830 feet of open, high-banked turns and drops
- 4-person tube rocks back and forth along a water tunnel, then splashes down in a pool
- Net ladders
- Water cannons
- 1,000-gallon tipping bucket
- Concessions

Hours
10:30am – 8pm

Fees

General Admission	$24.99
Junior Admission Under 48"	$19.99
2 & Under	FREE
General Parking	$10
Preferred Parking	$15
Season Pass	$69.99

4. Hawaiian Falls Garland

4550 North Garland Ave.
Garland, TX 75040

This water park in Garland features a wave pool, halfpipe tube ride, speed slides, interactive kids' water play area with dump bucket, tube slides, mat-racing slide, body slides, lazy river, and concessions.

Fees:

Daily over 48” tall	$17.99
Daily under 48” tall	$9.99
Senior	$9.99
2 & under	FREE
Season Pass	$79.99

Hours:

Mon-Sat	10:30 am – 7 pm
Sun	Noon – 7pm

5. Hawaiian Falls The Colony

4400 Paige Road
The Colony, TX

This water park includes a wave pool, halfpipe tube ride, lazy river, large play feature with dump bucket, multi-lane twisting waterslide with zero-ground run out, inner tube slides, drop slides, water walkway, cabanas for rent, and concessions.

Fees:

Daily over 48” tall	$17.99
Daily under 48” tall	$9.99
Senior	$9.99
2 & under	FREE
Season Pass	$79.99

Hours:

Mon/Tues/Thurs/Fri	10:30 am – 7 pm
Wed	10:30 am – 5:30 pm
Sat	10:30 am – 6 pm
Sun	Noon – 7 pm

6. Denton Waterworks

2400 Long Road
Denton, Texas 76207
940.349.8800

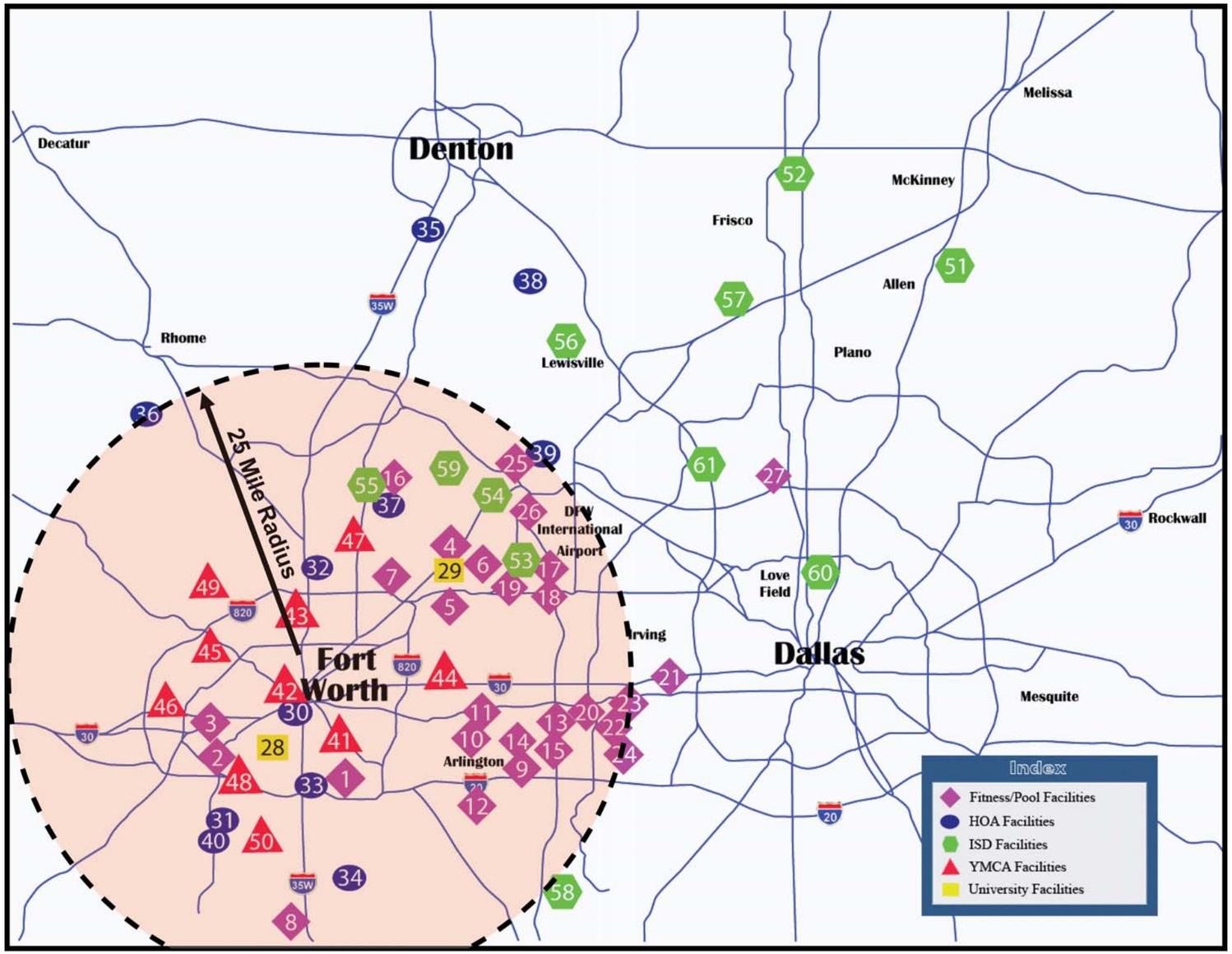
The Denton Waterworks Park features four giant water slides; children's play pool with water playground; 600 ft. long continuous flow tubing river; a sand volleyball court; two indoor pools, open during the summer season; seventeen acres with large grassy play areas, outdoor amphitheater, pavilions and shade structures; and a concession stand.

Fees

Residents:	
12 & up	$10
6-11	$8
2-5	$5
Under 2	FREE
Nonresidents:	
12 & up	$12
6-11	$10
2-5	$7
Under 2	FREE
Season Pass	
Resident:	
Individual	$75
Family	$225
Nonresident:	
Individual	$90
Family	$275

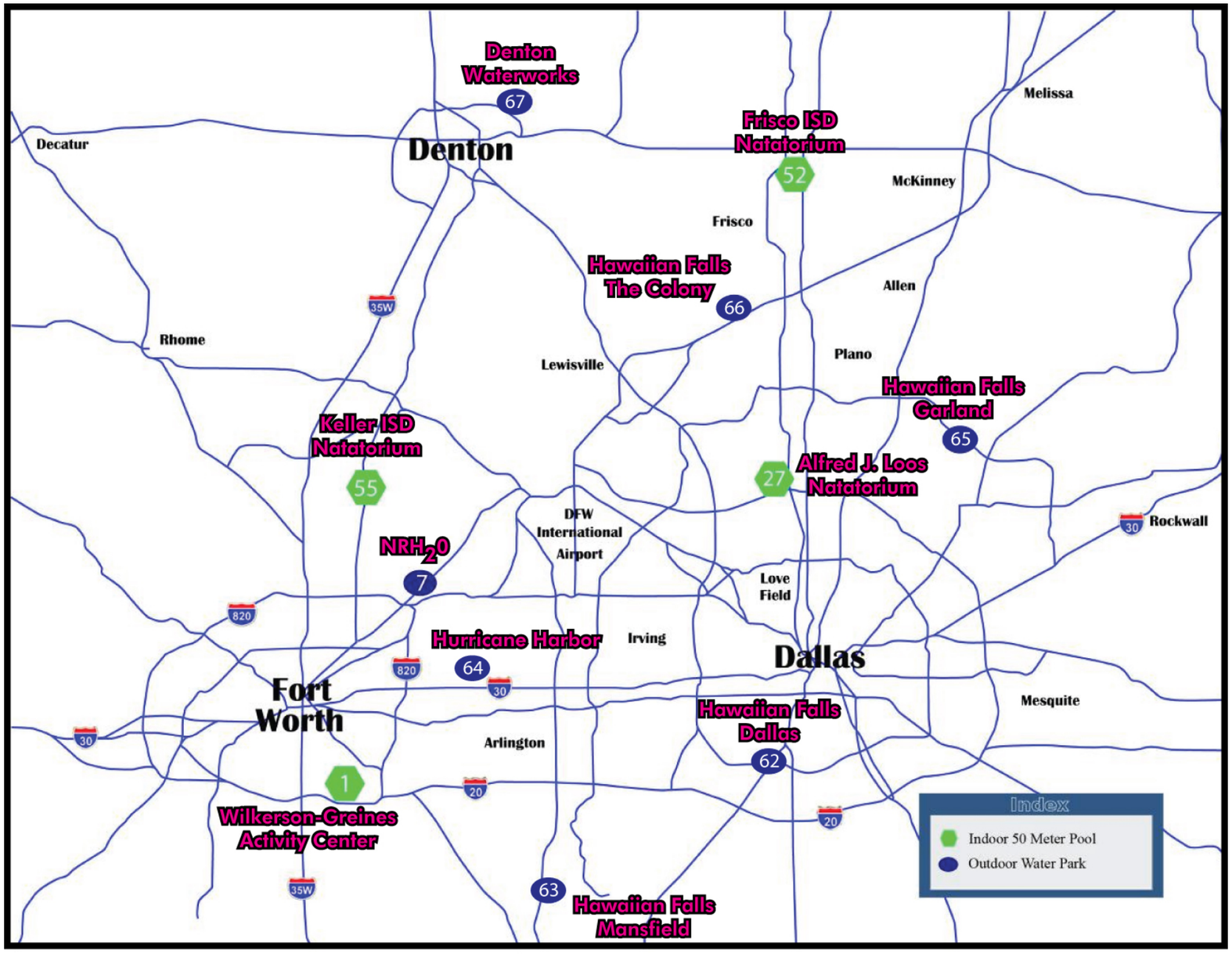
Hours

Mon/Tues/Thurs/Fri	11 am – 9 pm
Wed/Sat	11 am – 7 pm
Sun	Noon – 7 pm



Map 8: 25-Mile Radius of Fort Worth Area
Outdoor Pools, Indoor Pools, and Indoor/Outdoor Bundled Pools

The above map shows outdoor pools, indoor pools, and indoor/outdoor bundled pools in a 25-mile radius. The numbers correspond to the pools in the provider analysis.



Map 9: Indoor 50-Meter Pools and Outdoor Waterparks in the Metroplex

The above map shows Indoor 50-meter pools and outdoor waterparks in the Metroplex. The numbers correspond to the pools in the provider analysis.

Section 6: Aquatic Programming

6

It is the city's goal to operate recreation programming as both a public service and a revenue generator. An important goal of the master plan is to provide health and fitness recreation programming to reverse obesity trends for the community. A newer swimming system could accommodate a much needed and growing recreational swim market. Any program schedule will require flexibility to adapt to specific needs of the community. It is the responsibility of the aquatics director to monitor user group demands and adjust schedules accordingly.

Recommended Aquatic Programming

- Swim Team Training
- Swim Team Meets
- Masters Swimming
- Fitness Lap Swimming
- Recreational Swimming
- Swim Lessons
- Instructional Swim Classes
- Survival Swimming
- Lifeguard and Lifesaving Instruction
- Water Safety / Elementary School Drown-Proofing Campaigns
- Aqua Aerobics
- Deep Water Exercise Classes
- Water Fitness and Wellness Classes
- Aqua Sports
- Physically Challenged Swim Programs
- Aquatic Therapy
- Birthday Parties
- Organization Rentals

Marketing Strategy

While a great deal of marketing efforts will be focused on bringing customers into the facilities, other efforts will need to focus on the sales budget, develop an easy and concise means of explaining activities and fees to users, and create a simple protocol for scheduling rentals and other events to create a loyal customer base. Marketing efforts will need to:

- Determine user needs
- Define the identity of each facility and mission
- Identify the potential user groups for the new services offered by the staff of the facilities
- Develop a clear message that explains how the aquatic centers can fulfill those needs

Targeting Specific Markets

Customers are a source of innovative ideas. Valuing customers and their opinions gives them a sense of ownership and pride in the facility, a perfect combination for continued word-of-mouth promotion. Information can be garnered through:

- Interviews focus groups and surveys of program participants. Information can be used to determine current levels of satisfaction, program fulfillment and future needs.
- Get to know customers, ask for feedback and be open to their observations and suggestions will help build a network within the community.
- Identify new customer groups, and verify that the message of each marketing campaign is being successfully communicated.

Media and Community Relations

As a not-for-profit entity, various local media outlets represent a valuable opportunity for free or low-cost publicity.

- Traditional advertising such as program brochures, school flyers, visual displays, web page, newspaper, radio, and television are all combined with specifically targeted campaigns unique to each facility.
- Develop public relations contacts with local broadcast and print media by submitting or suggesting topics on the aquatic centers' activities and services including issues involving education and accident prevention.
- The use of local celebrities such as sports and radio personalities can also help promote events such as Teen Night or sponsoring organizations like Little League and outreach programs to local groups including girl/boy scouts, hospitals, retirement communities and corporations. Such programs can be tailored to the needs and interests of the individual groups by focusing on wellness, safety, training, competition or recreation.

Facility Capacity

Types of spaces and associated capacity will determine the degree the facilities will be used.

- Generally, recreational swimmers prefer shallow water of four feet or less allowing participation in a variety of water-related activities while still touching the pool bottom. In estimating capacity for recreational use, a maximum density of 25 square feet per person is assumed. Based on a length of stay of two to three hours, turnover in-house attendance is two and a half times per day for the recreational swimmer.
- For deep water, the maximum density is assumed to be 100 square feet per person. Based on a length of stay of two to three hours, turnover in-house attendance is three times per day for the competitive swimmer.

Additional spaces not listed such as office space and locker rooms have no impact on programming and market penetration has not been included in this analysis. Capacity of spaces is directly correlated to attendance.

The following table is one way to view the contribution the available capacity has to the projected attendance. It is necessary to use the descriptive above to project how many people can be accommodated in any given space using the per square foot guideline.

Table 13
Capacity Analysis All Facilities

	Element A NFAC	Element B MFAC	Element C LFAC	Element D CC	Element E Pad	Element F 50 M	Element G Destination	Element H Therapy
WET-SIDE CAPACITY								
Training (Available 25-Yard Lanes)								
Outdoor Comp pool	0	6	22	0	0	0	0	0
Outdoor Leisure pool	3	0	0	0	0	0	0	0
Outdoor Tot pool	0	0	0	0	0	0	0	0
Indoor Comp pool	0	0	0	8	0	22	0	0
Indoor Leisure pool	0	0	0	3	0	0	0	0
Indoor Spa	0	0	0	0	0	0	0	0
Indoor Therapy	0	0	0	0	0	0	0	0
Spray Pad	0	0	0	0	0	0	0	0
Total	3	6	22	11	0	22	0	0
Estimated Training Holding Capacity	15	30	110	55	0	110	0	0
Daily Training Capacity	45	90	330	165	0	330	0	0
Spectator Seating (Square Feet)	0	0	4,000	750	0	4,500	0	0
Specatator Seating Capacity	0	0	800	125	0	900	0	0
Recreation (Surface Area Sq. Ft.)								
Outdoor Comp pool	0	3375	13220	0	0	0	0	0
Outdoor Leisure pool	5467	9200	13300	9200	0	0	20328	0
Outdoor Tot pool	700	700	2000	700	0	0	1200	0
Indoor Comp pool	0	0	0	4500	0	12640	0	0
Indoor Leisure pool	0	0	0	5800	0	0	0	0
Indoor Spa	0	0	0	300	0	0	0	0
Indoor Therapy	0	0	0	0	0	0	0	600
Spray Pad	0	0	0	0	2100	0	0	0
Total	6,167	13,275	28,520	20,500	2,100	12,640	21,528	600
Estimated Recreation Holding Capacity	227	489	1,050	754	105	465	990	30
Daily Recreation Holding Capacity	567	1,221	2,624	1,886	263	1,163	2,476	75
Total Holding Capacity	242	519	1,160	809	105	575	990	30
Total Daily Facility Capacity	**612**	**1,311**	**2,954**	**2,051**	**263**	**1,493**	**2,476**	**75**

Source: Counsilman-Hunsaker

Parking

On-site parking must provide for easy drop-off and pick-up. The parking requirement for the concepts assumes that, on average, three participants will arrive in each car. The final design must also provide service vehicle access to the mechanical areas.

Table 14
Opinion of Parking

	Element A NFAC	Element B MFAC	Element C LFAC	Element D CC	Element E Pad	Element F 50 M	Element G Destination	Element H Therapy
Parking	81	173	387	270	35	195	330	10
Parking Sq. Ft.	27,000	57,000	126,000	88,000	12,000	64,000	108,000	4,000
Impervious Structure	43,642	104,005	204,844	138,610	21,995	110,126	179,970	7,120
Total Program Sq. Ft.	70,642	161,005	330,844	226,610	33,995	174,126	287,970	11,120
Total Sq. Ft. with Efficiency	141,285	322,010	661,688	453,220	67,990	348,252	575,940	22,240
Minimum Site Size Requirements	3.24	7.39	15.19	10.40	1.56	7.99	13.22	0.51
Recommended Site Size	4.87	11.09	22.79	15.61	2.34	11.99	19.83	0.77

Source: Counsilman Hunsaker

Projected Attendance by Option

Based on the preceding methodology, the following attendance numbers are projected for the options. It has been well documented that attendance increases as amenities become more diverse and exciting.

Table 15
Opinion of Attendance Fort Worth NFAC

NFAC Market Population	2008	2009	2010	2011	2012
0 to 3 Miles	129,259	131,095	132,932	134,768	136,604
3 to 5 Miles	149,581	151,417	153,254	155,090	156,926
5 to 10 Miles	373,907	375,743	377,580	379,416	381,252
10 to 15 Miles	444,146	445,982	447,819	449,655	451,491
15 to 25 Miles	987,464	989,300	991,137	992,973	994,809
Vistor Market	0	0	0	0	0
Market Penetration Rate					
0 to 3 Miles	25.0%	25.0%	25.0%	25.0%	25.0%
3 to 5 Miles	10.0%	10.0%	10.0%	10.0%	10.0%
5 to 10 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
10 to 15 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
15 to 25 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
Vistor Market	0.0%	0.0%	0.0%	0.0%	0.0%
Projected Attendance					
0 to 3 Miles	32,315	32,774	33,233	33,692	34,151
3 to 5 Miles	14,958	15,142	15,325	15,509	15,693
5 to 10 Miles	0	0	0	0	0
10 to 15 Miles	0	0	0	0	0
15 to 25 Miles	0	0	0	0	0
Vistor Market	0	0	0	0	0
TOTAL	33,091	33,541	33,991	34,441	34,891

Source: Counsilman Hunsaker

Table 16
Opinion of Attendance Fort Worth MFAC

MFAC Market Population	2008	2009	2010	2011	2012
0 to 3 Miles	129,259	131,095	132,932	134,768	136,604
3 to 5 Miles	149,581	151,417	153,254	155,090	156,926
5 to 10 Miles	373,907	375,743	377,580	379,416	381,252
10 to 15 Miles	444,146	445,982	447,819	449,655	451,491
15 to 25 Miles	987,464	989,300	991,137	992,973	994,809
Vistor Market	0	0	0	0	0
Market Penetration Rate					
0 to 3 Miles	30.0%	30.0%	30.0%	30.0%	30.0%
3 to 5 Miles	30.0%	30.0%	30.0%	30.0%	30.0%
5 to 10 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
10 to 15 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
15 to 25 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
Vistor Market	0.0%	0.0%	0.0%	0.0%	0.0%
Projected Attendance					
0 to 3 Miles	38,778	39,329	39,879	40,430	40,981
3 to 5 Miles	44,874	45,425	45,976	46,527	47,078
5 to 10 Miles	0	0	0	0	0
10 to 15 Miles	0	0	0	0	0
15 to 25 Miles	0	0	0	0	0
Vistor Market	0	0	0	0	0
TOTAL	71,104	72,041	72,977	73,914	74,850

Source: Counsilman Hunsaker

Table 17
Opinion of Attendance Fort Worth LFAC

LFAC Market Population	2008	2009	2010	2011	2012
0 to 3 Miles	129,259	131,095	132,932	134,768	136,604
3 to 5 Miles	149,581	151,417	153,254	155,090	156,926
5 to 10 Miles	373,907	375,743	377,580	379,416	381,252
10 to 15 Miles	444,146	445,982	447,819	449,655	451,491
15 to 25 Miles	987,464	989,300	991,137	992,973	994,809
Vistor Market	0	0	0	0	0
Market Penetration Rate					
0 to 3 Miles	35.0%	35.0%	35.0%	35.0%	35.0%
3 to 5 Miles	35.0%	35.0%	35.0%	35.0%	35.0%
5 to 10 Miles	10.0%	10.0%	10.0%	10.0%	10.0%
10 to 15 Miles	1.0%	1.0%	1.0%	1.0%	1.0%
15 to 25 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
Vistor Market	0.0%	0.0%	0.0%	0.0%	0.0%
Projected Attendance					
0 to 3 Miles	45,241	45,883	46,526	47,169	47,811
3 to 5 Miles	52,353	52,996	53,639	54,281	54,924
5 to 10 Miles	37,391	37,574	37,758	37,942	38,125
10 to 15 Miles	4,441	4,460	4,478	4,497	4,515
15 to 25 Miles	0	0	0	0	0
Vistor Market	0	0	0	0	0
TOTAL	125,484	126,822	128,161	129,499	130,838

Source: Counsilman Hunsaker

Table 18
Opinion of Attendance Fort Worth CC

CC Market Population	2008	2009	2010	2011	2012
0 to 3 Miles	129,259	131,095	132,932	134,768	136,604
3 to 5 Miles	149,581	151,417	153,254	155,090	156,926
5 to 10 Miles	373,907	375,743	377,580	379,416	381,252
10 to 15 Miles	444,146	445,982	447,819	449,655	451,491
15 to 25 Miles	987,464	989,300	991,137	992,973	994,809
Vistor Market	0	0	0	0	0
Market Penetration Rate					
0 to 3 Miles	40.0%	40.0%	40.0%	40.0%	40.0%
3 to 5 Miles	40.0%	40.0%	40.0%	40.0%	40.0%
5 to 10 Miles	1.0%	1.0%	1.0%	1.0%	1.0%
10 to 15 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
15 to 25 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
Vistor Market	0.0%	0.0%	0.0%	0.0%	0.0%
Projected Attendance					
0 to 3 Miles	51,704	52,438	53,173	53,907	54,642
3 to 5 Miles	59,832	60,567	61,301	62,036	62,770
5 to 10 Miles	3,739	3,757	3,776	3,794	3,813
10 to 15 Miles	0	0	0	0	0
15 to 25 Miles	0	0	0	0	0
Vistor Market	0	0	0	0	0
TOTAL	115,275	116,763	118,250	119,737	121,225

Source: Counsilman Hunsaker

Table 19
Opinion of Attendance Fort Worth Pad

Pad Market Population	2008	2009	2010	2011	2012
0 to 3 Miles	129,259	131,095	132,932	134,768	136,604
3 to 5 Miles	149,581	151,417	153,254	155,090	156,926
5 to 10 Miles	373,907	375,743	377,580	379,416	381,252
10 to 15 Miles	444,146	445,982	447,819	449,655	451,491
15 to 25 Miles	987,464	989,300	991,137	992,973	994,809
Vistor Market	0	0	0	0	0
Market Penetration Rate					
0 to 3 Miles	12.5%	12.5%	12.5%	12.5%	12.5%
3 to 5 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
5 to 10 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
10 to 15 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
15 to 25 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
Vistor Market	0.0%	0.0%	0.0%	0.0%	0.0%
Projected Attendance					
0 to 3 Miles	16,157	16,387	16,616	16,846	17,076
3 to 5 Miles	0	0	0	0	0
5 to 10 Miles	0	0	0	0	0
10 to 15 Miles	0	0	0	0	0
15 to 25 Miles	0	0	0	0	0
Vistor Market	0	0	0	0	0
TOTAL	16,157	16,387	16,616	16,846	17,076

Source: Counsilman Hunsaker

Table 20
Opinion of Attendance Fort Worth 50 M

50 M Market Population	2008	2009	2010	2011	2012
0 to 3 Miles	129,259	131,095	132,932	134,768	136,604
3 to 5 Miles	149,581	151,417	153,254	155,090	156,926
5 to 10 Miles	373,907	375,743	377,580	379,416	381,252
10 to 15 Miles	444,146	445,982	447,819	449,655	451,491
15 to 25 Miles	987,464	989,300	991,137	992,973	994,809
Vistor Market	0	0	0	0	0
Market Penetration Rate					
0 to 3 Miles	25.0%	25.0%	25.0%	25.0%	25.0%
3 to 5 Miles	20.0%	20.0%	20.0%	20.0%	20.0%
5 to 10 Miles	5.0%	5.0%	5.0%	5.0%	5.0%
10 to 15 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
15 to 25 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
Vistor Market	0.0%	0.0%	0.0%	0.0%	0.0%
Projected Attendance					
0 to 3 Miles	32,315	32,774	33,233	33,692	34,151
3 to 5 Miles	29,916	30,283	30,651	31,018	31,385
5 to 10 Miles	18,695	18,787	18,879	18,971	19,063
10 to 15 Miles	0	0	0	0	0
15 to 25 Miles	0	0	0	0	0
Vistor Market	0	0	0	0	0
TOTAL	80,926	81,845	82,763	83,681	84,599

Source: Counsilman Hunsaker

Table 21
Opinion of Attendance Fort Worth Destination

Destination Market Population	2008	2009	2010	2011	2012
0 to 3 Miles	129,259	131,095	132,932	134,768	136,604
3 to 5 Miles	149,581	151,417	153,254	155,090	156,926
5 to 10 Miles	373,907	375,743	377,580	379,416	381,252
10 to 15 Miles	444,146	445,982	447,819	449,655	451,491
15 to 25 Miles	987,464	989,300	991,137	992,973	994,809
Vistor Market	0	0	0	0	0
Market Penetration Rate					
0 to 3 Miles	35.0%	35.0%	35.0%	35.0%	35.0%
3 to 5 Miles	35.0%	35.0%	35.0%	35.0%	35.0%
5 to 10 Miles	10.0%	10.0%	10.0%	10.0%	10.0%
10 to 15 Miles	1.0%	1.0%	1.0%	1.0%	1.0%
15 to 25 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
Vistor Market	0.0%	0.0%	0.0%	0.0%	0.0%
Projected Attendance					
0 to 3 Miles	45,241	45,883	46,526	47,169	47,811
3 to 5 Miles	52,353	52,996	53,639	54,281	54,924
5 to 10 Miles	37,391	37,574	37,758	37,942	38,125
10 to 15 Miles	4,441	4,460	4,478	4,497	4,515
15 to 25 Miles	0	0	0	0	0
Vistor Market	0	0	0	0	0
TOTAL	139,426	140,914	142,401	143,888	145,376

Source: Counsilman Hunsaker

Table 22
Opinion of Attendance Fort Worth Therapy

Therapy Market Population	2008	2009	2010	2011	2012
0 to 3 Miles	129,259	131,095	132,932	134,768	136,604
3 to 5 Miles	149,581	151,417	153,254	155,090	156,926
5 to 10 Miles	373,907	375,743	377,580	379,416	381,252
10 to 15 Miles	444,146	445,982	447,819	449,655	451,491
15 to 25 Miles	987,464	989,300	991,137	992,973	994,809
Vistor Market	0	0	0	0	0
Market Penetration Rate					
0 to 3 Miles	6.0%	6.0%	6.0%	6.0%	6.0%
3 to 5 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
5 to 10 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
10 to 15 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
15 to 25 Miles	0.0%	0.0%	0.0%	0.0%	0.0%
Vistor Market	0.0%	0.0%	0.0%	0.0%	0.0%
Projected Attendance					
0 to 3 Miles	7,756	7,866	7,976	8,086	8,196
3 to 5 Miles	0	0	0	0	0
5 to 10 Miles	0	0	0	0	0
10 to 15 Miles	0	0	0	0	0
15 to 25 Miles	0	0	0	0	0
Vistor Market	0	0	0	0	0
TOTAL	7,756	7,866	7,976	8,086	8,196

Source: Counsilman Hunsaker

As indicated, attendance is projected to increase during the five-year span due to increasing levels of population in the area. For this analysis, 2008 is considered the first year of operation. The further into the future projections are made, the more limited the accuracy of the data becomes.

Recreation Program Revenue

Recreation program revenue projections include age-group competitive swimming, swim lessons, school district programming, aqua aerobic and therapy programming. It is assumed these user groups, because of their high volume of use, will pay a lower fee per person admission. Programming will need to be scheduled so as not to significantly impact community recreation programming. The following tables summarize recreation program demand, per capita spending, and revenue potential for the City of Fort Worth aquatic centers. The table assumes the cost of the program has been deducted from generated fees and shows the "net" program revenue. For example, the revenue projected for swimming lessons is after the instructor cost.

Visits per Program Day: number of participants in a particular activity per day. Swim team rental refers to one swim meet on a particular day.
Programming Days: number of days each activity will be programmed during the summer season.
Per Capita Spending: revenue generated per participant per day of activity after related costs are paid, for instance, the $1.00 assumed for each swim team participant per day is after the instructors are paid.
Opinion of Revenue (Net): the resulting revenue generated by each activity. (Visits per Program Day) multiplied by (Programming Days) multiplied by (Per Capita Spending) = Opinion of Revenue (Net).

Table 23
Estimated Recreation Programming Attendance
All Facilities
City of Fort Worth

Visits per Program Day	Element A NFAC	Element B MFAC	Element C LFAC	Element D CC	Element E Pad	Element F 50 M	Element G Destination	Element H Therapy
Swim Meet Rental	-	1	1	1	-	1	-	-
USA Swim Team	-	-	250	100	-	250	-	-
High School Swim Team	-	-	-	40	-	40	-	-
Summer Swim Lessons	30	75	75	75	-	75	50	-
Winter Swim Lessons	-	-	-	50	-	50	-	10
City Swim Team	-	60	60	60	-	60	-	-
Masters Swim Team	-	-	40	20	-	40	-	-
Wellness Programming	-	-	-	10	-	10	-	35
Birthday Party	1	2	3	1	-	1	3	-
Private Rental	1	1	1	1	-	1	1	-
Programming Days	NFAC	MFAC	LFAC	CC	Pad	50 M	Destination	Therapy
Swim Meet Rental	-	5	6	5	-	16	-	-
USA Swim Team	-	-	100	260	-	260	-	-
High School Swim Team	-	-	-	90	-	90	-	-
Summer Swim Lessons	36	36	36	36	-	36	36	-
Winter Swim Lessons	-	-	-	80	-	80	-	64
City Swim Team	-	60	60	60	-	60	-	-
Masters Swim Team	-	90	90	260	-	260	-	-
Wellness Programming	-	-	-	150	-	150	-	200
Birthday Party	30	30	30	150	-	30	30	-
Private Rental	15	30	30	100	-	15	40	-

Table 23 cont.

Per Capita Spending (Net)	Element A NFAC	Element B MFAC	Element C LFAC	Element D CC	Element E Pad	Element F 50 M	Element G Destination	Element H Therapy
Swim Meet Rental	$0.00	$200.00	$1,200.00	$800.00	$0.00	$2,500.00	$0.00	$0.00
USA Swim Team	$0.00	$1.50	$1.50	$2.50	$0.00	$2.50	$0.00	$0.00
High School Swim Team	$0.00	$1.50	$1.50	$2.50	$0.00	$2.50	$2.00	$2.00
Summer Swim Lessons	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00
Winter Swim Lessons	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00
City Swim Team	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Masters Swim Team	$2.00	$2.00	$2.00	$2.00	$0.00	$2.00	$2.00	$0.00
Wellness Programming	$2.50	$2.50	$2.50	$2.50	$0.00	$2.50	$2.50	$2.50
Birthday Party	$15.00	$30.00	$50.00	$30.00	$0.00	$30.00	$75.00	$0.00
Private Rental	$30.00	$50.00	$75.00	$50.00	$0.00	$50.00	$150.00	$0.00
Opinion of Revenue (Net)	NFAC	MFAC	LFAC	CC	Pad	50 M	Destination	Therapy
Swim Meet Rental	$0	$1,000	$7,200	$4,000	$0	$40,000	$0	$0
USA Swim Team	$0	$0	$37,500	$65,000	$0	$162,500	$0	$0
High School Swim Team	$0	$0	$0	$9,000	$0	$9,000	$0	$0
Summer Swim Lessons	$1,080	$2,700	$2,700	$2,700	$0	$2,700	$1,800	$0
Winter Swim Lessons	$0	$0	$0	$4,000	$0	$4,000	$0	$640
City Swim Team	$0	$0	$0	$0	$0	$0	$0	$0
Masters Swim Team	$0	$0	$7,200	$10,400	$0	$20,800	$0	$0
Wellness Programming	$0	$0	$0	$3,750	$0	$3,750	$0	$17,500
Birthday Party	$450	$1,800	$4,500	$4,500	$0	$900	$6,750	$0
Private Rental	$450	$1,500	$2,250	$5,000	$0	$750	$6,000	$0
User-Group Revenue	**$1,980**	**$7,000**	**$61,350**	**$108,350**	**$0**	**$244,400**	**$14,550**	**$18,140**

Source: Counsilman Hunsaker

Fee Structure

In order to project revenue, fee schedules are established. Three general approaches to evaluating the fee structure of an aquatic center include:

1. Maximize revenue by charging what the market will support. Programs and facilities operate with positive cash flow. If excess funds are available at season's end, they can be used to support under-funded programs.

2. Break-even in the operation of the facility. This approach is increasing in popularity as funding is becoming limited to organizations. Capital funds are used to create the facility; operational funds are generated from the user on a break-even basis.

3. Subsidy pricing historically has been the policy of many community facilities and is currently the strategy of the city's pools.

A critical component of an enterprise fund management protocol is the revenue and pricing policy.

Sample Fee Structure

The following tables are sample fee structures developed based on local providers, target markets, and similar existing facilities across the country.

Table 24
Sample Fee Structure: NFAC

NFAC	
Category	Rate
General Admission	Residents
Adult (18 & Older)	3.00
Children (3-17)	2.00
Free	0
General Admission	Non-Residents
Adult	4.00
Child	3.00
Annual Pass	
Resident	
Individual	45.00
Family	135.00
Non-Resident	
Individual	60.00
Family	180.00

Table 25
Sample Fee Structure: MFAC

MFAC	
Category	Rate
General Admission	Residents
Adult (18 & Older)	3.50
Children (3-17)	2.50
Free	0
General Admission	Non-Residents
Adult	4.50
Child	3.50
Annual Pass	
Resident	
Individual	55.00
Family	165.00
Non-Resident	
Individual	70.00
Family	210.00

Table 26
Sample Fee Structure: LFAC

LFAC	
Category	Rate
General Admission	Residents
Adult (18 & Older)	5.00
Children (3-17)	4.00
Free	0
General Admission	Non-Residents
Adult	7.00
Child	5.00
Annual Pass	
Resident	
Individual	80.00
Family	120.00
Non-Resident	
Individual	110.00
Family	160.00

Table 27
Sample Fee Structure: CC and 50 M

CC	
Category	Rate
General Admission	Residents
Adult (18 & Older)	5.00
Children (3-17)	4.00
Free	0
General Admission	Non-Residents
Adult	7.00
Child	6.00
Annual Pass	
Resident	
Individual	140.00
Family	225.00
Non-Resident	
Individual	210.00
Family	350.00

Table 28
Sample Fee Structure: Destination

Destination	
Category	Rate
General Admission	Residents
Adult (18 & Older)	9.75
Children (3-17)	5.25
Free	-
General Admission	Non-Residents
Adult	9.75
Child	5.25
Annual Pass	
Resident	
Individual	60.00
Family	-
Non-Resident	
Individual	60.00
Family	-

Table 29
Sample Fee Structure: Therapy

Therapy	
Category	Rate
General Admission	Residents
Adult (18 & Older)	2.00
Children (3-17)	1.00
Free	-
General Admission	Non-Residents
Adult	3.00
Child	2.00
Annual Pass	
Resident	
Individual	75.00
Family	175.00
Non-Resident	
Individual	125.00
Family	225.00

Source: Counsilman-Hunsaker

Recommendation

Facilities presented in the master plan provide an increased level of recreation value than is currently being offered at the existing pools. As changes are made to the aquatic experience, an opportunity exists to modify fee schedules.

Based on the level of recreation programming offered in the presented concepts, a review of national pricing structures and the goal of the city, it is recommended to increase per capita spending by revisiting the pricing policy of the aquatic services.

Opinion of Revenue

Per capita income is the projection of increased revenues that will be generated from increases in projected annual attendance. The formula reflects the category for admission, the rate of each category, and the percentage of attendance that might be expected from that category.

The following table takes into consideration the revenue streams from programs and classes offered for each facility. Attendance projections reflect the number of people who will attend the facility during the course of operations.

- NFAC Per Capita projection is $2.53.
- MFAC Per Capita projection is $2.96.
- LFAC Per Capita projection is $4.37.
- CC and 50 M Per Capita projections are $4.74.
- Destination Per Capita projection is $6.49.
- Therapy Per Capita projection is $1.96.
- Sprayground is free.

Table 30
Opinion of Attendee Spending: NFAC
City of Fort Worth

NFAC			
Category	Rate	Percent of Visits	Per Visit Unit
General Admission	Residents		
Adult (18 & Older)	3.00	34%	1.02
Children (3-17)	2.00	18%	0.36
Free	0	2%	-
General Admission	Non-Residents		
Adult	4.00	13%	0.52
Child	3.00	8%	0.24
Annual Pass			
Resident			
Individual	45.00	5%	0.06
Family	135.00	10%	0.11
Non-Resident			
Individual	60.00	7%	0.12
Family	180.00	3%	0.05
Subtotal / Average		100%	2.48
Food			$ 0.05
Total			$2.53

Source: Counsilman Hunsaker

Table 31
Opinion of Attendee Spending: MFAC
City of Fort Worth

MFAC			
Category	Rate	Percent of Visits	Per Visit Unit
General Admission	Residents		
Adult (18 & Older)	3.50	34%	1.19
Children (3-17)	2.50	18%	0.45
Free	0	2%	-
General Admission	Non-Residents		
Adult	4.50	13%	0.59
Child	3.50	8%	0.28
Annual Pass			
Resident			
Individual	55.00	5%	0.07
Family	165.00	10%	0.14
Non-Resident			
Individual	70.00	7%	0.14
Family	210.00	3%	0.06
Subtotal / Average		100%	2.91
Food			$ 0.05
Total			$2.96

Source: Counsilman Hunsaker

Table 32
Opinion of Attendee Spending: LFAC
City of Fort Worth

LFAC			
Category	Rate	Percent of Visits	Per Visit Unit
General Admission	Residents		
Adult (18 & Older)	5.00	34%	1.70
Children (3-17)	4.00	18%	0.72
Free	0	2%	-
General Admission	Non-Residents		
Adult	7.00	13%	0.91
Child	6.00	8%	0.48
Annual Pass			
Resident			
Individual	80.00	5%	0.10
Family	120.00	10%	0.10
Non-Resident			
Individual	110.00	7%	0.22
Family	160.00	3%	0.04
Subtotal / Average		100%	4.27
Food			$ 0.10
Total			$4.37

Source: Counsilman Hunsaker

Table 33
Opinion of Attendee Spending: CC and 50 M
City of Fort Worth

CC	50 M			
Category		Rate	Percent of Visits	Per Visit Unit
General Admission		Residents		
	Adult (18 & Older)	5.00	34%	1.70
	Children (3-17)	4.00	18%	0.72
	Free	0	2%	-
General Admission		Non-Residents		
	Adult	7.00	13%	0.91
	Child	6.00	8%	0.48
Annual Pass				
Resident				
	Individual	140.00	5%	0.18
	Family	225.00	10%	0.19
Non-Resident				
	Individual	210.00	7%	0.42
	Family	350.00	3%	0.10
Subtotal / Average			100%	4.69
Food				$ 0.05
Total				$4.74

Source: Counsilman Hunsaker

Table 34
Opinion of Attendee Spending: Destination
City of Fort Worth

Destination			
Category	Rate	Percent of Visits	Per Visit Unit
General Admission	Residents		
Adult (18 & Older)	9.75	34%	3.32
Children (3-17)	5.25	18%	0.95
Free	0	2%	-
General Admission	Non-Residents		
Adult	9.75	13%	1.27
Child	5.25	8%	0.42
Annual Pass			
Resident			
Individual	60.00	15%	0.23
Family	-	0%	-
Non-Resident			
Individual	60.00	10%	0.17
Family	-	0%	-
Subtotal / Average		100%	6.34
Food			$ 0.15
Total			$6.49

Source: Counsilman Hunsaker

Table 35
Opinion of Attendee Spending: Therapy
City of Fort Worth

Therapy			
Category	Rate	Percent of Visits	Per Visit Unit
General Admission	Residents		
Adult (18 & Older)	2.00	34%	0.68
Children (3-17)	1.00	18%	0.18
Free	-	2%	-
General Admission	Non-Residents		
Adult	3.00	13%	0.39
Child	2.00	8%	0.16
Annual Pass			
Resident			
Individual	75.00	5%	0.09
Family	175.00	10%	0.15
Non-Resident			
Individual	125.00	7%	0.25
Family	225.00	3%	0.06
Subtotal / Average		100%	1.96
Food			$ -
Total			$1.96

Source: Counsilman Hunsaker

The following table takes into consideration the revenue streams from special user group and general attendance, resulting in an opinion of revenue for each facility.

Table 36
Opinion of Revenue
All Facilities
City of Fort Worth

	Element A NFAC	Element B MFAC	Element C LFAC	Element D CC	Element E Pad	Element F 50 M	Element G Destination	Element H Therapy
Attendance								
2008	33,091	71,104	125,484	115,275	16,157	80,926	139,426	7,756
2009	33,541	72,041	126,822	116,763	16,387	81,845	140,914	7,866
2010	33,991	72,977	128,161	118,250	16,616	82,763	142,401	7,976
2011	34,441	73,914	129,499	119,737	16,846	83,681	143,888	8,086
2012	34,891	74,850	130,838	121,225	17,076	84,599	145,376	8,196
Per Capita Spending	$2.53	$2.96	$4.37	$4.74	Free	$4.74	$6.49	$1.96
Special User Group Spending	$1,980	$7,000	$61,350	$108,350	None	$244,400	$14,550	$18,140
2008	$85,629	$217,364	$610,170	$654,519	$0	$627,826	$919,975	$33,348
2009	$89,310	$226,528	$632,665	$678,162	$0	$643,809	$957,086	$34,027
2010	$93,059	$235,859	$655,511	$702,228	$0	$660,053	$994,776	$34,719
2011	$96,876	$245,356	$678,708	$726,717	$0	$676,558	$1,033,046	$35,423
2012	$100,761	$255,019	$702,257	$751,629	$0	$693,324	$1,071,896	$36,141

Source: Counsilman Hunsaker

Opinion of Probable Expenses

To address unique factors to the City of Forth, this plan recommends an expense model for estimating probable expenses for major areas of labor, contractual services, commodities, and utilities. User projections are made based on programming. Expenses are estimated, taking into account hours of operation, attendance projections, local weather patterns, local utility rates, and other key items. Operating data from other facilities are reviewed and taken into account to form projections. The table at the end of this section reflects a summary of all operating expenses, assumptions and estimates detailed by the expense category.

Facility Staff

Projected annual payroll expenses are listed by full-time and part-time classifications reflecting benefits and taxes. Scheduling employees is determined by programming demand and management procedure. Wherever possible, pay rates were determined using existing city job classifications and wage scales.

Personnel Requirements

The most significant contributing factor to a successful program is a courteous, conscientious, outgoing, hard-working staff. The employees determine the facility's success by their actions and expertise. Labor cost for these positions can be found on the table below. Cost for swim instructors and other employees associated with program income are factored in as cost against net programming revenue.

Table 37
Labor Budget
All Facilities
City of Fort Worth

	Hours Per Day								Cost per Hour		Days Per Season			Employer Expense							
Elements	A	B	C	D	E	F	G	H						A	B	C	D	E	F	G	H
Job Description	NFAC	MFAC	LFAC	CC	Pad	50 M	Destination	Therapy	Hr	Rate	Outdoor	Indoor	Spraygound	NFAC	MFAC	LFAC	CC	Pad	50 M	Destination	Therapy
Summer																					
Front Desk	10	11	17	10	0	15	22	0	6.50	$7.48	100	100	100	7,475	8,223	12,708	7,475	0	11,213	16,445	0
Manager	12	15	18	16	0	16	24	11	11.25	$12.94	100	100	100	15,525	19,406	23,288	20,700	0	20,700	31,050	14,231
Indoor Leisure guard	0	0	0	63	0	0	0	11	8.50	$9.78	100	100	100	0	0	0	61,583	0	0	0	10,753
Indoor Comp guard	0	17	34	32	0	56	0	0	8.50	$9.78	100	100	100	0	16,618	33,235	31,280	0	54,740	0	0
Outdoor Guard	56	87	164	85	0	9	316	0	8.50	$9.78	100	100	100	54,740	85,043	160,310	83,088	0	8,798	308,890	0
Maintenance	2	4	8	10	1	4	10	1	13.00	$14.95	100	100	100	2,990	5,980	11,960	14,950	1,495	5,980	14,950	1,495
Summer Total	80	134	241	216	1	100	372	23						$80,730	$135,269	$241,500	$219,075	$1,495	$101,430	$371,335	$26,479
Winter																					
Front Desk	0	0	0	5	0	15	0	0	6.50	$7.48	10	260	50	0	0	0	9,718	0	29,153	0	0
Manager	0	0	0	16	0	16	4	11	11.25	$12.94	10	260	50	0	0	0	53,820	0	53,820	518	37,001
Indoor Leisure guard	0	0	0	44	0	0	0	11	8.50	$9.78	10	260	50	0	0	0	111,826	0	0	0	27,957
Indoor Comp guard	0	0	0	32	0	35	0	0	8.50	$9.78	10	260	50	0	0	0	81,328	0	88,953	0	0
Outdoor Guard	0	0	0	0	0	0	4	0	8.50	$9.78	10	260	50	0	0	0	0	0	0	391	0
Maintenance	4	6	8	8	1	4	8	1	13.00	$14.95	10	260	50	598	897	1,196	31,096	748	15,548	1,196	3,887
Winter Total	4	6	8	105	1	70	16	23						$598	$897	$1,196	$287,788	$748	$187,473	$2,105	$68,845
Annual Labor Expense														**$81,328**	**$136,166**	**$242,696**	**$506,863**	**$2,243**	**$288,903**	**$373,440**	**$95,324**

Source: Counsilman Hunsaker

Repairs and Maintenance

The manufacturers of some types of mechanical equipment recommend annual maintenance programs to ensure proper performance of their equipment. Much of this work will be performed by outside contractors. In addition, for daily operation of the facilities, miscellaneous items will need to be repaired by outside firms.

Commodities

Commodities are day-to-day products used to operate aquatic centers. Office supplies, program supplies, custodial supplies, repair supplies and chemicals are included. In determining annual chemical expense, chemical treatment assumes the use of calcium hypochlorite and muriatic acid (pH buffer). Chemical use can depend upon bather load and chemical balance of the water. In estimating annual costs, medium bather load figures are assumed. In the preceding marketing strategy section, mass-marketing and direct-marketing strategies are discussed.

Heating/Dehumidification

In determining utility costs, current energy costs at other facilities in the area were reviewed. Total costs include energy, energy demand and delivery charges. Caution must be used when comparing this cost with operating expenses of other facilities across the country.

Electricity

The calculations below are based on 2007 utility rate information. A figure of $0.100 cents per kWh was estimated, including both demand and energy costs. The table conveys the estimated electricity costs for all new facilities.

Table 38
Annual Energy Demand Analysis
All Facilities
City of Fort Worth

	NFAC	MFAC	LFAC	CC	Pad	50 M	Destination	Therapy
Motors	$ 29,985	$ 56,724	$ 99,385	$ 61,464	$ 10,751	$ 28,064	$ 62,810	$ 2,156
Lighting	$ 6,560	$ 11,003	$ 21,317	$ 36,892	$ 1,104	$ 63,423	$ 18,589	$ 4,362
Total Electric Costs	$ 36,546	$ 67,726	$ 120,702	$ 98,356	$ 11,855	$ 91,486	$ 81,399	$ 6,518

Source: Counsilman Hunsaker

For the purpose of calculating operation expenses for all outdoor facilities, it is assumed the filter motors will operate 24 hours a day, 115 days per year, and the auxiliary motors will operate 8 hours per day, 105 days per year. Indoor facilities will operate year-round.

Lighting and Miscellaneous Electric Use

In estimating support space electrical requirements, these spaces are assumed to be occupied and supported approximately 18 hours per day. Miscellaneous items include chemical feeders, blow dryers, office equipment, etc.

Water and Sewer

Water and sewer services will be needed for domestic use and compensation for evaporation and backwashing purposes. Backwash water and domestic water will be released to the sanitary system. This does not include landscape irrigation.

Table 39
Opinion of Operating Expenses
All Facilities
City of Fort Worth

	NFAC	MFAC	LFAC	CC	Pad	50 M	Destination	Therapy
Facility Staff								
Facility Director	$0	$0	$56,250	$0	$0	$56,250	$75,000	$0
Recreation Coordinators	$0	$21,875	$21,875	$43,750	$0	$43,750	$43,750	$0
Programming Assistant / Interns	$0	$0	$5,760	$0	$0	$0	$9,216	$0
Summer Employment	$80,730	$135,269	$241,500	$219,075	$1,495	$101,430	$371,335	$26,479
Winter Employment	$598	$897	$1,196	$287,788	$748	$187,473	$2,105	$68,845
Training	$10,000	$15,000	$20,000	$35,000	$1,500	$35,000	$35,000	$1,000
Total Labor	**$91,328**	**$173,041**	**$346,581**	**$585,613**	**$3,743**	**$423,903**	**$536,406**	**$96,324**
Contractual Services								
Insurance	$7,934	$14,243	$27,809	$40,876	$1,274	$33,684	$33,924	$5,096
Repair and Maintenance	$8,800	$16,300	$33,000	$40,300	$2,000	$40,300	$36,000	$3,300
Total Contractual Services	**$16,734**	**$30,543**	**$60,809**	**$81,176**	**$3,274**	**$73,984**	**$69,924**	**$8,396**
Commodities								
Operating Supplies	$5,280	$9,780	$19,800	$24,180	$1,200	$24,180	$21,600	$1,980
Chemicals	$9,297	$21,513	$61,798	$58,974	$984	$60,790	$33,913	$3,593
Advertising	$1,000	$1,000	$30,000	$25,000	$0	$25,000	$50,000	$1,000
Total Commodities	**$15,577**	**$32,293**	**$111,598**	**$108,154**	**$2,184**	**$109,970**	**$105,513**	**$6,573**
Utilities								
HVAC	$5,756	$8,471	$13,666	$106,401	$0	$218,460	$11,513	$12,276
Electricity	$36,546	$67,726	$120,702	$98,356	$11,855	$91,486	$81,399	$6,518
Pool Heating	$0	$0	$42,195	$0	$0	$0	$0	$6,241
Trash Service	$2,700	$3,600	$6,300	$12,480	$2,700	$12,480	$6,300	$2,700
Telephone	$6,240	$6,240	$18,720	$9,360	$3,120	$9,360	$18,720	$3,120
Water & Sewer	$7,048	$15,977	$35,065	$25,221	$2,680	$19,344	$28,766	$1,430
Total Utilities	**$58,290**	**$102,014**	**$236,647**	**$251,818**	**$20,354**	**$351,130**	**$146,697**	**$32,284**
Total Operating Expenses	**$181,929**	**$337,891**	**$755,635**	**$1,026,761**	**$29,555**	**$958,987**	**$858,540**	**$143,577**
Capital Replacement Fund	$17,500	$32,500	$66,000	$80,500	$4,000	$80,500	$72,000	$6,500
Total Expense	**$199,429**	**$370,391**	**$821,635**	**$1,107,261**	**$33,555**	**$1,039,487**	**$930,540**	**$150,077**

Source: Counsilman Hunsaker

Cashflow

The following table represents projections of gross operating performance for all options based on revenue projections and expense estimates.

Table 40
Opinion of Financial Performance
All Facilities
City of Fort Worth

	2008	2009	2010	2011	2012
Element A					
NFAC					
Project Cost	$3,500,000				
Attendance	33,091				
Revenue	$85,629	$89,310	$93,059	$96,876	$100,761
Expense	$181,929	$186,478	$191,140	$195,918	$200,816
Operating Cashflow	(96,300)	(97,168)	(98,081)	(99,042)	(100,055)
Recapture Rate	**47%**	**48%**	**49%**	**49%**	**50%**
Capital Replacement	17,500	17,500	17,500	17,500	17,500
Debt Service	(305,146)	(305,146)	(305,146)	(305,146)	(305,146)
Cashflow	(418,946)	(419,814)	(420,727)	(421,688)	(422,701)
Element B					
MFAC					
Project Cost	$6,500,000				
Attendance	71,104				
Revenue	$217,364	$226,528	$235,859	$245,356	$255,019
Expense	$337,891	$346,338	$354,997	$363,871	$372,968
Operating Cashflow	(120,527)	(119,810)	(119,137)	(118,515)	(117,949)
Recapture Rate	**64%**	**65%**	**66%**	**67%**	**68%**
Capital Replacement	32,500	32,500	32,500	32,500	32,500
Debt Service	(566,700)	(566,700)	(566,700)	(566,700)	(566,700)
Cashflow	(719,727)	(719,009)	(718,337)	(717,715)	(717,149)
Element C					
LFAC					
Project Cost	$13,200,000				
Attendance	125,484				
Revenue	$610,170	$632,665	$655,511	$678,708	$702,257
Expense	$755,635	$774,526	$793,889	$813,737	$834,080
Operating Cashflow	(145,465)	(141,861)	(138,379)	(135,029)	(131,823)
Recapture Rate	**81%**	**82%**	**83%**	**83%**	**84%**
Capital Replacement	66,000	66,000	66,000	66,000	66,000
Debt Service	(1,150,836)	(1,150,836)	(1,150,836)	(1,150,836)	(1,150,836)
Cashflow	(1,362,301)	(1,358,698)	(1,355,215)	(1,351,865)	(1,348,660)

Table 40
(cont.)

Element D					
CC					
Project Cost	$16,100,000				
Attendance	115,275				
Revenue	$654,519	$678,162	$702,228	$726,717	$751,629
Expense	$1,026,761	$1,052,430	$1,078,741	$1,105,709	$1,133,352
Operating Cashflow	(372,242)	(374,268)	(376,512)	(378,992)	(381,723)
Recapture Rate	**64%**	**64%**	**65%**	**66%**	**66%**
Capital Replacement	80,500	80,500	80,500	80,500	80,500
Debt Service	(1,403,671)	(1,403,671)	(1,403,671)	(1,403,671)	(1,403,671)
Cashflow	(1,856,414)	(1,858,439)	(1,860,684)	(1,863,163)	(1,865,894)
Element E					
Pad					
Project Cost	$800,000				
Attendance	16,157				
Revenue	$0	$0	$0	$0	$0
Expense	$29,555	$30,294	$31,052	$31,828	$32,624
Operating Cashflow	(29,555)	(30,294)	(31,052)	(31,828)	(32,624)
Recapture Rate	**0%**	**0%**	**0%**	**0%**	**0%**
Capital Replacement	4,000	4,000	4,000	4,000	4,000
Debt Service	(69,748)	(69,748)	(69,748)	(69,748)	(69,748)
Cashflow	(103,303)	(104,042)	(104,799)	(105,575)	(106,371)
Element F					
50 M					
Project Cost	$16,100,000				
Attendance	80,926				
Revenue	$627,826	$643,809	$660,053	$676,558	$693,324
Expense	$958,987	$982,961	$1,007,535	$1,032,724	$1,058,542
Operating Cashflow	(331,161)	(339,153)	(347,482)	(356,166)	(365,218)
Recapture Rate	**65%**	**65%**	**66%**	**66%**	**65%**
Capital Replacement	80,500	80,500	80,500	80,500	80,500
Debt Service	(1,403,671)	(1,403,671)	(1,403,671)	(1,403,671)	(1,403,671)
Cashflow	(1,815,332)	(1,823,324)	(1,831,654)	(1,840,337)	(1,849,389)

Table 40
(cont.)

	2008	2009	2010	2011	2012
Element G					
Destination					
Project Cost	$14,400,000				
Attendance	139,426				
Revenue	$919,975	$957,086	$994,776	$1,033,046	$1,071,896
Expense	$858,540	$880,003	$902,003	$924,553	$947,667
Operating Cashflow	61,435	77,083	92,773	108,493	124,229
Recapture Rate	**107%**	**109%**	**110%**	**112%**	**113%**
Capital Replacement	72,000	72,000	72,000	72,000	72,000
Debt Service	(1,255,458)	(1,255,458)	(1,255,458)	(1,255,458)	(1,255,458)
Cashflow	(1,266,023)	(1,250,375)	(1,234,685)	(1,218,964)	(1,203,229)
Element H					
Therapy					
Project Cost	$1,300,000				
Attendance	7,756				
Revenue	$33,348	$34,027	$34,719	$35,423	$36,141
Expense	$143,577	$147,166	$150,845	$154,616	$158,482
Operating Cashflow	(110,228)	(113,139)	(116,126)	(119,193)	(122,341)
Recapture Rate	**23%**	**23%**	**23%**	**23%**	**23%**
Capital Replacement	6,500	6,500	6,500	6,500	6,500
Debt Service	(113,340)	(113,340)	(113,340)	(113,340)	(113,340)
Cashflow	(230,068)	(232,979)	(235,966)	(239,033)	(242,181)

Source: Counsilman Hunsaker

Section 8: Implementation Strategy

8

The City of Fort Worth has a long history of aquatic programming with facilities that date back to the early1920s. The "toolbox" of options described in this Aquatic Master Plan represents a wide variety of solutions derived from community and political input to meet the diverse needs of Fort Worth residents. Alternatives were evaluated on the basis of the effectiveness of response to the community's needs as well as likely capital costs, revenues, and expenditures. Out of this investigation, three strategies of service were developed that address the present and future needs of Fort Worth's aquatic community.

In developing the implementation strategies, the city not only looked at multiple scenarios in meeting aquatic needs but also distance from facilities and access both financially and geographically in each area. The three strategies support Fort Worth's aquatic goal of providing more progressive, user-specific amenities that will command a greater citywide experience. Further, strategies respond by recommending that all new construction include aquatic features that will garner greater levels of attendance.

Of equal importance, providing affordable access to aquatic facilities for all segments of its citizenry has been tailored to strike a careful balance between securing reasonable compensation for enhanced amenities while preserving the program's tradition of affordability.

The financial analysis of recommended aquatic "toolbox" elements demonstrates that multi-generational facilities are a more efficient use of operating expenditures than smaller elements. Bundled aquatic facilities conserve capital funding by virtue of their inherent economies of scale, limiting site development and infrastructure costs. The recommended strategy responds by favoring multi-purpose facilities over smaller single use facilities in areas of growth.

In this concluding chapter, a recommended implementation strategy and a City directed implementation strategy are proposed for the City of Fort Worth's aquatics program. The strategies build on all of the information developed in each prior section of this report and translate these many factors into a concrete, fully realizable blueprint for the future development of the city's aquatic facilities and programming through 2029. It is recommended that the city continues to study its growth and needs as each phase is implemented.

In determining an Aquatic Master Plan, the city looked at the needs of the local aquatic groups, neighborhoods and other service providers. Moreover, factors such as accessibility, affordability and sustainability were taken into consideration. Based on stakeholder input, the following sound planning strategies were identified to drive the development of the implementation strategies:

- Underserved residents of the City of Fort Worth in the North, South, East and West desire aquatic facilities that will allow the public an aquatic experience and build community support for aquatics.
- Central area residents desire new neighborhood-type pools at walkable locations. Existing pool sites can be developed into exciting splash pads, i.e., Sycamore Park (in progress).
- Indoor competitive pools will seek strategic partnerships with ISDs.
- The comprehensive aquatic system will be used in park master plans where sites can be determined during planning phases.

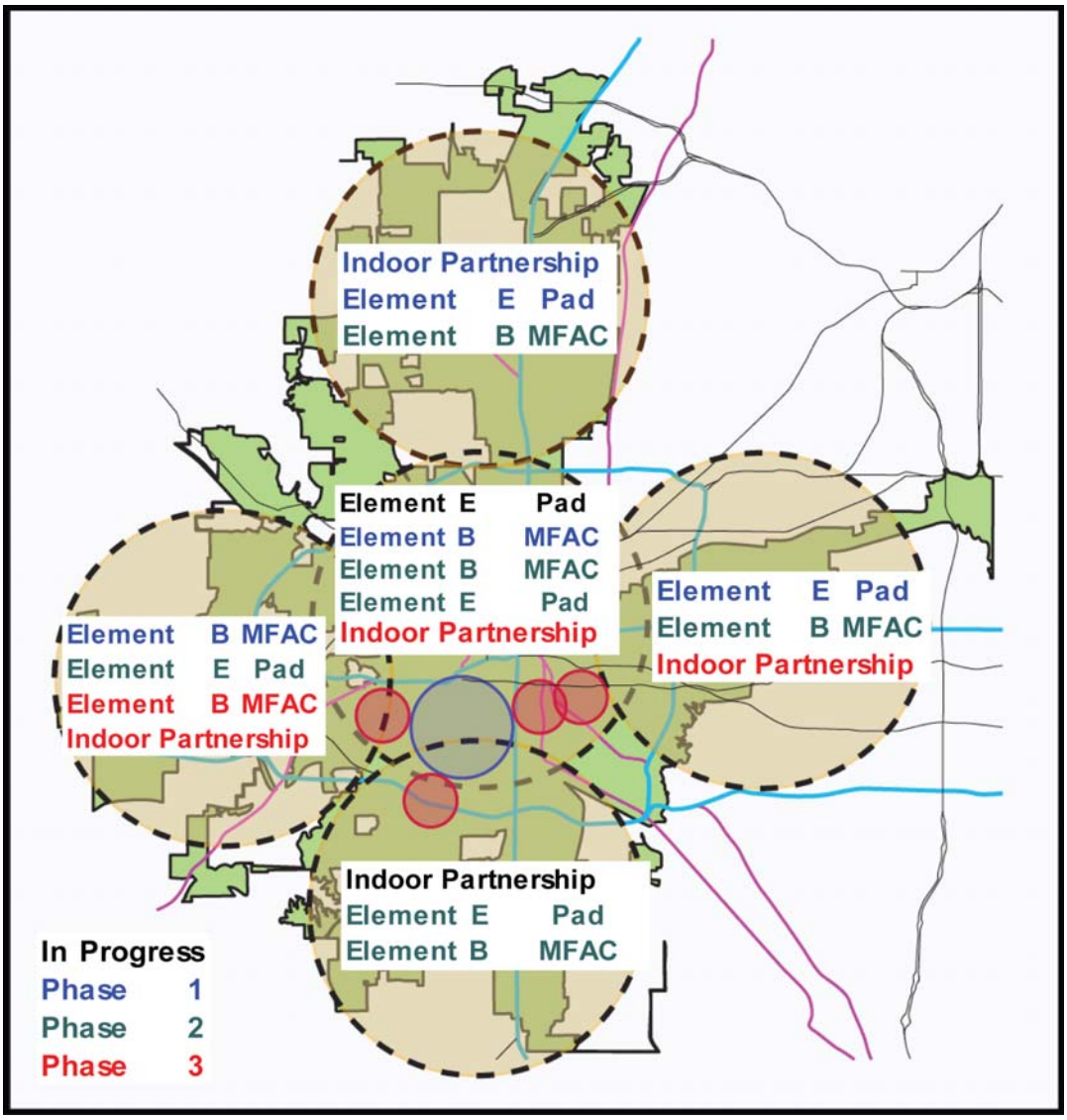
The following guiding principles are the basis for the implementation strategies:

- Develop an aquatic system of complementary facilities to fill in gaps in service areas and types throughout the city.
- Create a comprehensive system slowly over time for a sustainable financial future.
- Establish a funding mechanism to support the above strategy.
- Build the system to maintain safe, clean facilities.
- Provide a positive customer experience with solid programming.
- Utilize technology to become more efficient.
- Develop a funding plan and plan for future facilities in all phases of the strategy.

Recommended Strategy

The following recommended strategy will enable the city to move forward with a new model of service. The final scenario includes six splash pad sites, seven medium family aquatic center locations, and five joint-use partnership indoor pools. Based on sound planning strategies and guiding principles, the Fort Worth Aquatic Master Plan includes:

- **North**
  - **Indoor Partnership, Spray Pad, MFAC**
- **East**
  - **Indoor Partnership, Spray Pad, MFAC**
- **Central**
  - **Indoor Partnership, 2 Spray Pads, 2 MFAC**
- **West**
  - **Indoor Partnership, Spray Pad, 2 MFAC**
- **South**
  - **Indoor Partnership, Spray Pad, MFAC**



Recommended Implementation Strategy

Total Master Plan Cost: $53,300,000

**Note: Project costs are based on 2009 construction costs, an additional 5-10% per year inflation should be added as construction timeline is determined. This cost does not include City of Fort Worth PACS' contribution for joint-use facilities, excluding Crowley ISD.*

Table 41
Citywide Aquatic System

Scenario -	Recommended
Project Cost	$65,300,000
Attendance	594,675
Revenue	$1,521,546
Expense	$2,542,568
Operating Cashflow	(1,021,022)
Recapture Rate	**60%**
Capital Replacement	251,500
Debt Service	(4,385,383)
Cashflow	(5,657,905)

Source: Counsilman-Hunsaker

Table 42
Citywide Aquatic System Break Down

Aquatic Master Plan Recommended	North			South			East		
	Indoor Partner N/A	Element B MFAC	Element E Pad	Element D Crowley ISD	Element B MFAC	Element E Pad	Element B MFAC	Indoor Partner N/A	Element E Pad
Project Cost	$3,000,000	$6,500,000	$800,000	$3,000,000	$6,500,000	$800,000	$6,500,000	$3,000,000	$800,000
Attendance		71,104	16,157		71,104	16,157	71,104		16,157
Revenue		$217,364	$0		$217,364	$0	$217,364		$0
Expense		$337,891	$29,555		$337,891	$29,555	$337,891		$29,555
Operating Cashflow		(120,527)	(29,555)		(120,527)	(29,555)	(120,527)		(29,555)
Recapture Rate		**64%**	**0%**		**64%**	**0%**	**64%**		**0%**
Capital Replacement		32,500	4,000		32,500	4,000	32,500		4,000
Debt Service		(566,700)	(69,748)		(566,700)	(69,748)	(566,700)		(69,748)
Cashflow		(719,727)	(103,303)		(719,727)	(103,303)	(719,727)		(103,303)

Aquatic Master Plan Recommended	West				Central				
	Element B MFAC	Element B MFAC	Indoor Partner N/A	Element E Pad	Element B MFAC	Element B MFAC	Indoor Partner N/A	Element E Pad	Element E Pad
Project Cost	$6,500,000	$6,500,000	$3,000,000	$800,000	$6,500,000	$6,500,000	$3,000,000	$800,000	$800,000
Attendance	71,104	71,104		16,157	71,104	71,104		16,157	16,157
Revenue	$217,364	$217,364		$0	$217,364	$217,364		$0	$0
Expense	$337,891	$337,891		$29,555	$337,891	$337,891		$29,555	$29,555
Operating Cashflow	(120,527)	(120,527)		(29,555)	(120,527)	(120,527)		(29,555)	(29,555)
Recapture Rate	**64%**	**64%**		**0%**	**64%**	**64%**		**0%**	**0%**
Capital Replacement	32,500	32,500		4,000	32,500	32,500		4,000	4,000
Debt Service	(566,700)	(566,700)		(69,748)	(566,700)	(566,700)		(69,748)	(69,748)
Cashflow	(719,727)	(719,727)		(103,303)	(719,727)	(719,727)		(103,303)	(103,303)

Source: Counsilman-Hunsaker

Phasing Approach

Phase 1/Years 1-7

The following items are listed in no particular order, but are meant to serve as a check list for the first seven years of aquatic development for the City of Fort Worth.

Item 1:
Address short term items to existing pools and continue to operate as available.
Opinion of Probable Cost – See Audit

Item 2, Element E:
Open Sycamore Splash Pad (Summer 2008)
*Project Cost – $800,000 (already funded)

Item 3, Element D:
Complete study for South Region joint-use facility combining venue aquatics and community center amenities (Crowley ISD Study in progress)

- Develop site specific design
- Find source of funding

*Opinion of Probable Cost – $3,000,000

Item 4, Element B:
Develop Plan for West Region Medium Family Aquatic Center funded and operated by City of Fort Worth PACS.

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $6,500,000

Item 5, Element D:
Determine method for use of North Region joint-use facility combining venue aquatics and community center amenities

- Identify Public/Private partner opportunities (possibly Northwest ISD)
- Determine site location
- Develop site specific design
- Find source of funding

*Opinion of Probable Cost – $3,000,000

Item 6, Element E:
Develop Plan for modern Splash Pad located in the North Region funded and operated by City of Fort Worth PACS

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $800,000

Item 7, Element B:
Develop Plan for Central Region Medium Family Aquatic Center funded and operated by City of Fort Worth PACS.

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $6,500,000

Item 8, Element E:
Develop Plan for modern Splash Pad located in the East Region funded and operated by City of Fort Worth PACS

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $800,000

Phase 1 Summary
Phase 1 includes the addition of three splash pads (one already in progress), two medium family aquatic centers, and two joint-use partnership indoor pools.

**Total Phase 1 cost: $18,400,000*
**Note: Project costs are based on 2009 construction costs. An additional 5-10% per year inflation should be added as construction timeline is determined. This cost does not include City of Fort Worth PACS contribution for the joint-use facility located in the north or funds needed to improve condition to existing facilities.*

Phase 2/Years 8-15

The following items are listed in no particular order, but are meant to serve as a check list for years 8-15 of the aquatic development plan for the City of Fort Worth.

Item 1, Element D:
Determine method for use of joint-use facility located in the Central Region, combining venue aquatics and community center amenities.

- Identify Public/Private partner opportunities
- Determine site location
- Develop site specific design
- Find source of funding

*Opinion of Probable Cost – $3,000,000

Item 2, Element E:
Develop Plan for modern Splash Pad located in the South Region funded and operated by City of Fort Worth PACS

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $800,000

Item 3, Element B:
Develop Plan for East Region Medium Family Aquatic Center funded and operated by City of Fort Worth PACS.

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $6,500,000

Item 4, Element E:
Develop Plan for modern Splash Pad located in the West Region funded and operated by City of Fort Worth PACS

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $800,000

Item 5, Element B:
Develop Plan for North Region Medium Family Aquatic Center funded and operated by City of Fort Worth PACS.

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $6,500,000

Item 6, Element B:
Develop Plan for South Region Medium Family Aquatic Center funded and operated by City of Fort Worth PACS.

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $6,500,000

Item 7, Element D:
Determine method for use of West Region joint-use facility combining venue aquatics and community center amenities

- Identify Public/Private partner opportunities
- Determine site location
- Develop site specific design
- Find source of funding

*Opinion of Probable Cost – $3,000,000

Phase 2 Summary
Phase 2 includes two splash pad locations, three medium family aquatic centers, and two joint-use partnership indoor pools.

**Total Phase 2 cost: $21,100,000*
**Note: Project costs are based on 2009 construction costs, an additional 5-10% per year inflation should be added as construction timeline is determined. This cost does not include City of Fort Worth PACS' contribution for joint-use facility.*

Phase 3/Years 16-22

The following items are listed in no particular order, but are meant to serve as a check list for years 16-22 of the aquatic development plan for the City of Fort Worth.

Item 1, Element E:
Develop Plan for second modern Splash Pad located in the Central Region funded and operated by City of Fort Worth PACS

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $800,000

Item 2, Element B:
Develop Plan for second Central Region Medium Family Aquatic Center funded and operated by City of Fort Worth PACS.

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $6,500,000

Item 3, Element B:
Develop Plan for second West Region Medium Family Aquatic Center funded and operated by City of Fort Worth PACS.

- Determine site location
- Develop site specific design
- Find source of funding

Opinion of Probable Cost - $6,500,000

Item 4, Element D:
Determine method for use of East Region joint-use facility combining venue aquatics and community center amenities

- Identify Public/Private partner opportunities
- Determine site location
- Develop site specific design
- Find source of funding

*Opinion of Probable Cost – $3,000,000

Phase 3 Summary
Phase 3 includes one splash pad location, two medium family aquatic centers, and one joint-use partnership indoor pool.

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**Total Phase 3 cost: $13,800,000*
**Note: Project costs are based on 2009 construction costs, an additional 5-10% per year inflation should be added as construction timeline is determined.*
**3,000,000 was included for all indoor partnership as a place holder until funding is determined*

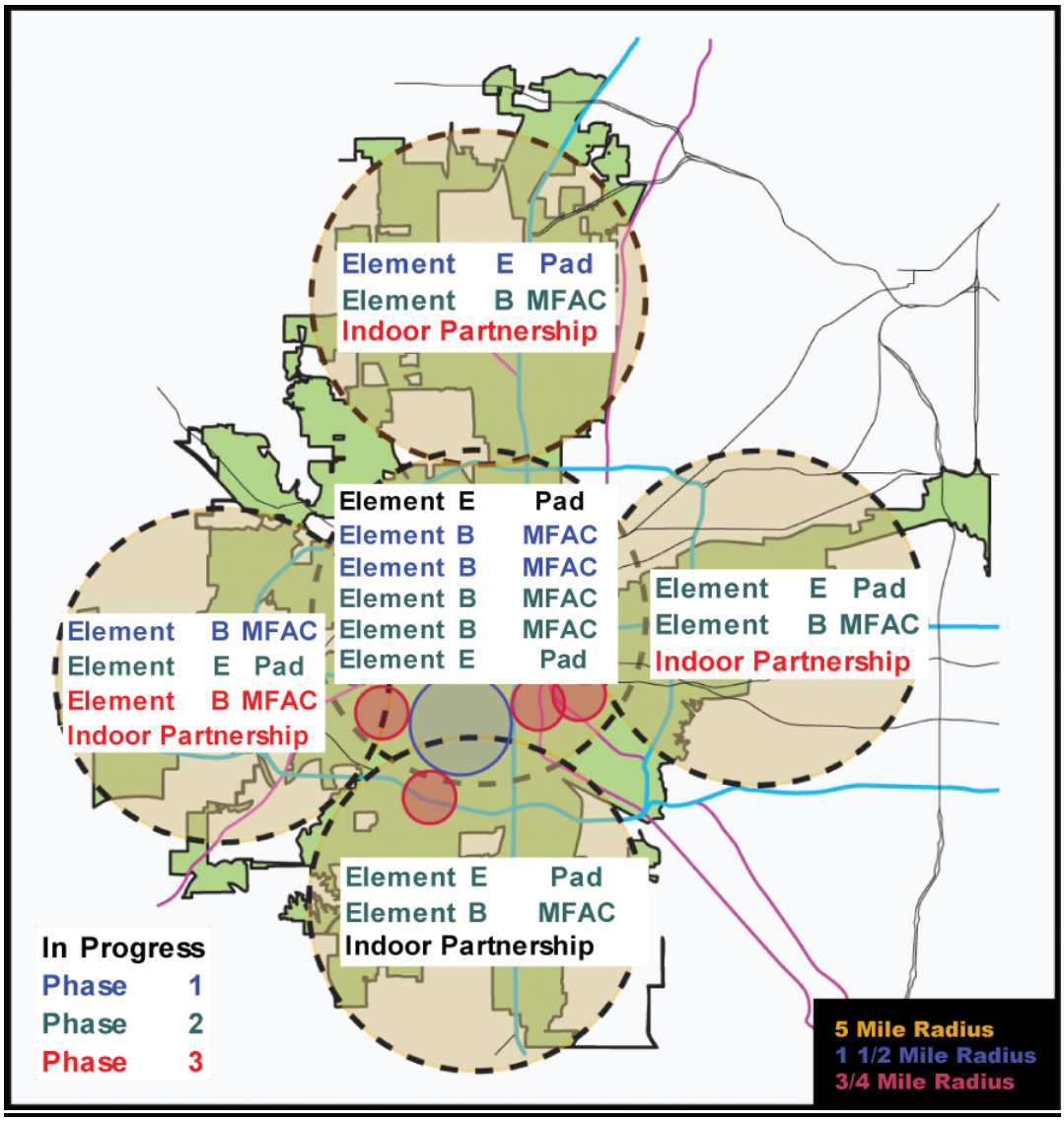
City Directed Strategy

The following strategy is the recommended strategy to move forward with a new model of service.

- Address existing City deteriorated infrastructure as highest priority.
- Focus on central city facilities, which have exhausted useful life.
- Locate facilities with access to public transportation.
- Assess impact of new facilities on existing aquatic program.
- Implement existing partnerships and pursue additional partnerships with school districts, counties, non-profit agencies, etc.
- Develop near-term and long-term funding strategy, including capital and operating/maintenance costs and revenue recapture rates.

- **North**
  - **Indoor Partnership, Spray Pad, MFAC**
- **East**
  - **Indoor Partnership, Spray Pad, MFAC**
- **Central**
  - **2 Spray Pads, 4 MFAC**
- **West**
  - **Indoor Partnership, Spray Pad, 2 MFAC**
- **South**
  - **Indoor Partnership, Spray Pad, MFAC**

This strategy was developed by City staff in order to provide a higher level of service.



City Directed Implementation Strategy

Total Master Plan Cost: $66,350,000

**Note: Project costs are based on 2009 construction costs, an additional 5-10% per year inflation should be added as construction timeline is determined. This cost does not include City of Fort Worth PACS' contribution for joint-use facilities beyond Crowley ISD.*

Table 46
Citywide Aquatic System

Scenario -	Staff Recommended
Project Cost	$66,350,000
Attendance	594,675
Revenue	$1,535,546
Expense	$3,218,349
Operating Cashflow	(1,682,804)
Recapture Rate	**48%**
Capital Replacement	316,500
Debt Service	(5,518,782)
Cashflow	(7,518,086)

Source: Counsilman-Hunsaker

Table 47
Citywide Aquatic System Break Down

Aquatic Master Plan City Directed Plan	North Indoor Partner N/A	North Element B MFAC	North Element E Pad	South Element D Crowley ISD	South Element B MFAC	South Element E Pad	East Element B MFAC	East Indoor Partner N/A	East Element E Pad
Project Cost		$6,500,000	$800,000	$2,500,000	$6,500,000	$800,000	$6,500,000		$800,000
Attendance		71,104	16,157		71,104	16,157	71,104		16,157
Revenue		$217,364	$0		$217,364	$0	$217,364		$0
Expense		$337,891	$29,555		$337,891	$29,555	$337,891		$29,555
Operating Cashflow		(120,527)	(29,555)		(120,527)	(29,555)	(120,527)		(29,555)
Recapture Rate		**64%**	**0%**		**64%**	**0%**	**64%**		**0%**
Capital Replacement		32,500	4,000		32,500	4,000	32,500		4,000
Debt Service		(566,700)	(69,748)		(566,700)	(69,748)	(566,700)		(69,748)
Cashflow		(719,727)	(103,303)		(719,727)	(103,303)	(719,727)		(103,303)

Aquatic Master Plan City Directed Plan	West Element B MFAC	West Element B MFAC	West Indoor Partner T/A	West Element E Pad	Central Element B MFAC	Central Element B MFAC	Central Element B MFAC	Central Element B MFAC	Central Element E Sycamore	Central Element E Pad	Demolition
Project Cost	$6,500,000	$6,500,000		$800,000	$6,500,000	$6,500,000	$6,500,000	$6,500,000	$750,000	$800,000	$600,000
Attendance	71,104	71,104		16,157	35,552	35,552	35,552	35,552	16,157	16,157	
Revenue	$217,364	$217,364		$0	$112,182	$112,182	$112,182	$112,182	$0	$0	
Expense	$337,891	$337,891		$29,555	$337,891	$337,891	$337,891	$337,891	$29,555	$29,555	
Operating Cashflow	(120,527)	(120,527)		(29,555)	(225,709)	(225,709)	(225,709)	(225,709)	(29,555)	(29,555)	
Recapture Rate	**64%**	**64%**		**0%**	**33%**	**33%**	**33%**	**33%**	**0%**	**0%**	
Capital Replacement	32,500	32,500		4,000	32,500	32,500	32,500	32,500	4,000	4,000	
Debt Service	(566,700)	(566,700)		(69,748)	(566,700)	(566,700)	(566,700)	(566,700)	(69,748)	(69,748)	
Cashflow	(719,727)	(719,727)		(103,303)	(824,909)	(824,909)	(824,909)	(824,909)	(103,303)	(103,303)	

Source: Counsilman-Hunsaker

Phasing Approach

Phase 1: Implementation-Funded

Phase 1a

- Sycamore Spray Pad

Opening July 2008

- Southwest Community Park
  Natatorium/Community Center $17.5 million
  In partnership with Crowley Independent School District
  Crowley ISD $15 million
  CFW $2.5 million

Opening March 2011

Phase 1: Implementation-Seven Year Plan Unfunded

Phase 1b Years 1-3 [2008-10]

- Demo and replace Sylvania and Marine Pools with MFAC at each site $13.2 million

Phase 1c Years 4-5 [2011-12]

- Demo Sycamore Pool and Kellis Pool and replace with MFAC (possibly) located at Cobb Park (pending Master Plan) $6.7 million

Phase 1d Years 6-7 [2013-14]

- Demo Hillside Pool (served by new MFAC at Cobb Park pending Master Plan) $100,000
- Demo Como Pool and replace with Spray Pad $900,000
- Construct MFAC to serve residents west of 1-35 and south of 1-30 (replaces Como and Kellis Pools) $6.5 million

Phase 1 Summary:

Phase 1: $30,650,000
1a $3.25 million (projects in progress) Looks like $17.5 million above
1b $13.2 million
1c $6.7 million
1d $7.5 million

Phase 2 and 3

Years 8-15 [2015-2022]

- Address remaining aquatic facility needs $35,700,000

Phase 2 and 3 Summary

Phase 2 and 3 addresses the remainder of the aquatic facilities noted in the overall plan. These facilities will be prioritized as funding becomes available.

**Total Phase 1cost $30,650,000*
**Total Phase 2 and 3 cost: $35,700,000*
**Note: Project costs are based on 2009 construction costs, an additional 5-10% per year inflation should be added as construction timeline is determined.*

Scenario -	Recommended	City Directed Plan
Project Cost	$65,300,000	$66,350,000
Attendance	594,675	594,675
Revenue	$1,521,546	$1,535,546
Expense	$2,542,568	$3,218,349
Operating Cashflow	(1,021,022)	(1,682,804)
Recapture Rate	**60%**	**48%**
Capital Replacement	251,500	316,500
Debt Service	(4,385,383)	(5,518,782)
Cashflow	(5,657,905)	(7,518,086)

Next Steps

Adopt CFW Aquatic Master Plan 2008 and incorporate plan into CFW Comprehensive Plan. Appropriate funding from Gas Well Royalties-Citywide Park Capital Improvement Fund for design and engineering for Phase 1b [Sylvania and Marine]-$1.5 million.

Park Master Plans will determine sites for each aquatic facility based on community input.

Site selection for aquatic facilities should include consideration of the following:

1. The site should be located within the appropriate aquatic service area
   - Neighborhood
   - Community
   - Regional

2. Sites that conform to existing master plans and strategies should be considered first:
   - The General Plan
   - Park Master Plans
   - Strong Neighborhood Initiative Plans

3. Priority should be given to sites that offer the following characteristics:
   - Physically accessible with an emphasis on proximity to public transportation, crosswalks and major streets.
   - Visible such that a civic presence can be achieved.
   - Land use compatible with adjacent property and good relationships with other aquatic providers.
   - Adequate size to support the intended program (parking, buffers, etc.).
   - Few development limitations.
   - City ownership or site control can be achieved easily and at a low cost

City of Fort Worth, Texas

Swimming Pool Audits

Forest Park Pool
Como Pool
Marine Pool
Sylvania Pool
Sycamore Pool
Kellis Pool
Hillside Pool

Kimley-Horn

COUNSILMAN ▪ HUNSAKER
The Ultimate Aquatic Advantage

January, 2008

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A. INTRODUCTION

The City of Ft. Worth commissioned Kimley Horn and Counsilman-Hunsaker to provide swimming pool audits in April, 2007. The City owns and operates seven aquatic facilities featuring outdoor swimming pools. The facilities are Forest Park, Lake Como, Marine, Sylvania, Sycamore, Kellis, and Hillside. The pools were originally built in 1922 (Forest Park), 1926 (Marine and Sycamore), 1936 (Sylvania), 1957 (Lake Como), and 1960 (Kellis and Hillside). The ages of the pools are 85, 81, 71, 50, and 47 years, respectively. The pools have undergone major renovations throughout the years. The City of Ft. Worth commissioned this audit to assist in identifying items that are substandard, not to current department of health requirements, or not operating as designed, to assist in defining a course of action regarding the future of the pools. In addition, an opinion of probable cost for recommended repairs and replacements is provided to illustrate the construction costs associated with bringing the pools up to current department of health requirements. The construction costs will reflect a repaired pool in which the pool shell will remain.

The Forest Park Pool opened in 1922 as a fill and drain pool and therefore did not have a filtration system. The pool water was drained each week and refilled with potable water. A major renovation took place in 1967 which gave the pool its current shape, a new bathhouse, new piping and a filtration system. Another renovation in 1991 added a zero depth entry, a PVC liner, a vacuum sand filtration system, and a stainless steel gutter. Amenities include a one meter and three meter diving board and three tube waterslides.

The Lake Como Pool opened in 1957 and underwent a renovation in 1994. This renovation included the addition of a stainless steel gutter, a vacuum sand filtration system, new piping, and new concrete decking. Also during the renovation, the depth of the pool was reduced from 12 feet to 8 feet.

The Marine Pool opened in 1926 as a fill and drain pool without a filtration system. A 1983 renovation included the installation of a vacuum sand filtration system, and the conversion from a single main drain to three. The depth across the pool was reduced during this renovation as well. The original concrete scum gutters are still in use.

The Sylvania Pool opened in 1936 as a fill and drain pool without a filtration system. A 1983 renovation added a vacuum sand filtration system and decreased the depth at both ends of the pool. The single main drain was replaced with three drains. The original concrete scum gutters are still in use.

The Sycamore Pool opened in 1926 as a fill and drain pool without a filtration system. A 1982 renovation included the installation of a vacuum sand filtration system and reduced the depth in the entire pool. The original scum gutters are still in use.

The Kellis Pool opened in 1960 and the original pool shell is still in use. Renovations have brought to the facility a high rate sand filtration system, new piping, new skimmers and non-slip hand-hold coping, and a new concrete deck.

The Hillside Pool opened in 1960. This facility was closed for five or six years and the bathhouse was demolished prior to its 1994 renovation and reopening. In 1994, Hillside Pool received new pool deck, stainless steel gutters, a high rate pressure sand filter, and a new bathhouse.

The conditions of the pools are not unusual for pools this age. As with other pools of similar age, the pools are facing physical obsolescence. Swimming pools are built to satisfy the existing standards at the time of construction or renovation. The department of health standards has changed over the years. The items identified in this report refer to items that do not meet the current Texas Department of State Health Services requirements for pools built today. When the pools were built or renovated, the construction was to current code at the time. The items identified as not meeting the current code do not indicate that the city has been operating the pools that are not to code. Pools are required to meet current codes when they are newly constructed or renovated and until such time may be considered to be "grandfathered". This needs to be confirmed with the local department of health. For instance, the turnover rate when the pools were last renovated was eight hours. Now, the Texas Department of State Health Services requires similar type pools to have a turnover rate of six hours. Likewise, the pools were constructed and renovated prior to the ADA (Americans with Disabilities Act) accessibility guidelines.

Thus, the issues do not indicate that the City has been operating the pools in an unsafe manner. The Department of Health monitors outdoor aquatic facilities during the summer months and reports deficiencies that the owner is required to address at that time. It is also assumed that since these pools are monitored by the local Department of Health, the pools are considered satisfactory to operate safely.

Seasonal upkeep for aging pools must also be considered as older pools will require additional time and labor, as well as, the cost for supplies, parts, and equipment, to keep the pools operational. To better understand the annual maintenance tasks, staff provided the following summary of the tasks required each year. It must be understood that with an aging aquatic facility some of the items noted in this report are handled on an ongoing basis.

Trades Division – Annual Maintenance Items

- Winterize all six (6) City of Fort Worth Pools at the end of the season
- Grease and bump re-circulating motors every three (3) months
- Check for leaks in the pool grounds once a month
- Facilities are checked twice a month for fence and wooden bench repairs throughout the off-season
- Paints and re-labels pipes in the filtration areas to ensure state code compliance
- Completes work orders submitted by the Aquatics Branch pertaining to maintenance at the pools (i.e. a blown fuse at Forest Park Pool, broken PVC pipes, replacing old valves, etc.)

- Prior to the season, ensures all electrical valves are opening and operating as they should
- Patches areas on all six (6) concrete pool shells in need of repair due to chipped surfaces or irregular areas
- Re-caulk pool shell seams around areas where stainless steel gutters connect to the pool or in expansion joints
- Replaces or repairs tile depth markers around the pools
- Re-wraps fill spouts (when needed) with protective insulation
- Repairs potential trip hazards on pool decks and sidewalks caused by ground shifting and re-bar exposure
- Secures bolts on diving boards, slides, and all handrails in the pool grounds

Aquatics Section – Annual Maintenance Items

- Maintains Forest Park at an operational level year-round (year-round maintenance includes winter maintenance, provided by Fort Worth staff)
- Keeps all six (6) pool shells free of debris throughout the entire off-season
- Keeps four (4) of the six (6) pool shells free of standing water via use of a sump pump due to the facility not having an operational main drain
- Power washes and paints all six (6) pool shells annually
- Re-paints transition lines in the pool shells annually
- Re-paints permanent lifeguard stands, wooden benches, slide ladders, and hand rails (when needed)
- Replaces life lines when needed
- Re-paints all signs on the deck (i.e. PLEASE WALK and NO DIVING) when needed
- Re-paints yellow warning lines on steps and other potential trip hazards at the pools
- Secures pool ladders and hand rails in the pool

Facility Maintenance – Annual Maintenance Items

- Paints bath houses, pump rooms, and storage facilities on a bi-annual basis
- Repairs/replaces light fixtures and bulbs in all bath houses (annually)
- Re-connects water fountains prior to the opening of the season

B. FACILITY DATA AND COST SUMMARY

Table 1
City of Fort Worth
Facility Data

	Estimated Surface Area (square feet)	Estimated Pool Volume (gallons)	Estimated Perimeter (feet)
Forest Park Pool	**19,110**	**750,000**	**774**
Como Pool	**4,340**	**154,000**	**266**
Marine Pool	**13,328**	**454,000**	**433**
Sylvania Pool	**13,080**	**445,000**	**428**
Sycamore Pool	**13,606**	**406,000**	**438**
Kellis Pool	**2,940**	**124,000**	**225**
Hillside Pool	**2,370**	**94,000**	**204**

	Estimated Flow Rate (gallons per minute)	CH Calculated Turnover Rate (hours)	Bather Load (Current Texas Department of State Health Services Standard)	Bather Load Posted
Forest Park Pool	**2,100**	**6.0**	**1,100**	**1000**
Como Pool	**450**	**5.7**	**238**	**125**
Marine Pool	**1,000**	**7.6**	**735**	**275**
Sylvania Pool	**1,200**	**6.2**	**744**	**275**
Sycamore Pool	**1,200**	**5.6**	**816**	**275**
Kellis Pool	**300**	**6.9**	**152**	**125**
Hillside Pool	**328**	**4.8**	**125**	**125**

Table 2
Opinion of Probable Construction Cost
Summary – All Facilities

Opinion of Probable Cost Summary Pool Repairs	
Forest Park Pool	$2,984,591
Como Pool	$912,323
Marine Pool	$2,000,091
Sylvania Pool	$2,028,081
Sycamore Pool	$2,373,379
Kellis Pool	$1,124,916
Hillside Pool	$1,072,819
Total (All Sites)	$12,496,200

C. FOREST PARK POOL

2850 Park Place

1. Forest Park Pool Commentary

Forest Park Swimming Pool was originally built in 1922 as a fill and drain pool, without a filtration system. A major renovation took place in 1967 which gave the pool its current shape, new bathhouse, and new piping and filtration system. Another renovation in 1991 consisted of the following: zero depth entry, PVC liner, vacuum sand filtration system, and stainless steel rollout gutters.

This site was observed on February 20, 2007 and though the facility was closed, the filtration system was in operation at that time. The volume of the pool was estimated to be 750,000 gallons, and the perimeter is approximately 774 feet. The surface area of the vacuum sand filter is 160 ft^2 and backwashing is performed manually. The reported flow meter reading is 2,100 gpm. This flow rate yields a turnover rate of 6.0 hours, which meets the 6 hour turnover rate currently required by the Texas Department of State Health Services. Because of issues concerning the pump and motor (described below) the turnover rate will gradually increase as the condition of the impeller worsens. The velocity through the four 24" x 36" main drain covers is 0.32 feet per second, which satisfies the current Texas Department of State Health Services regulation. The main drain covers will support a 6 hour turnover.

The filter backwash water is collected in a storage tank which drains to waste. It was reported that the water is pumped from the tank to the sanitary sewer.

The bather capacity is posted as 1,000 and the average daily attendance is 504 bathers. For this 19,110 square foot pool, the current Texas Department of State Health Services calculated bather load is 1,100.

The motor, pump, exposed piping, and Strantrol System 3 chemical controller reside in the pump pit, an approximately 6' deep concrete pit, enclosed by a chain link fence and steel roof. The vacuum sand filter is contained within a stainless steel vault recessed into the ground. The fill spout is positioned over the vault to add make up water directly to the filter. The chemical room is a small, painted cinder block building which stores the sodium hypochlorite sanitizer (liquid chlorine), LMI chlorine feed pump, muriatic acid pH buffer, and the Mec-O-Matic acid feed pump.

The facility is surrounded by a 6' chain link, barbed wire fence. The concrete deck varies in width but is never less than 15' wide, except for at the ends of three small peninsulas. The pool deck appears to be handicap accessible, while the bathhouse is not. The bathhouse is made of cinder block, and has a painted finish. The changing areas are both open air. Three hose bibs are provided without backflow prevention; two located inside the bathhouse and one located on the deck near the diving boards. There is a large patio area

near the bathhouse, and a fabric shade structure is in place with two picnic tables underneath. An emergency phone located outside the bathhouse.

2. Pool and Deck

A. Conditions

- The pool was fitted with a stainless steel gutter and a PVC liner in 1991. Prior to 1991 there were water loss issues; presently, the pool is reported to have minimal water loss beyond evaporation, backwash, and splash out. Therefore, there are still concerns regarding the integrity of the pool shell.
- A large hole in the liner that has been patched was observed in the lap pool area.
- Many of the lane line markers and wall targets are faded, delaminated, or missing completely.
- The stainless steel gutters are showing corrosion and the surge weirs do not appear to be operating as designed.
- The PVC grating which covers the gutter trough is not secured. Many of the grating sections are cracked or damaged.
- The zero depth entry appears to be greater than a 1:12 slope at the entrance and ADA (Americans with Disabilities Act) railings are not provided. Also, the current Texas Department of State Health Services standards require floor inlets in zero depth entries.
- A hydraulic handicap lift is on the property, but does not appear to be in use. Anchors were not found on the deck for the hydraulic lift. The handicap lift has since been removed from the site. Anchors were found that could possibly belong to an old mechanical lift.
- Vertical depth markings are not provided around the perimeter of the pool.
- A four inch safety marking across the bottom of the pool is not provided at the transition from shallow to deep water as required by the current Texas Department of State Health Services standards.
- The pool deck does show some cracking. The sidewalk that follows the path of the original pool shell has several areas of severe cracking. There are also several areas of chemical staining on the deck, which is evidence that water ponds on the deck instead of draining away from the pool.
- The clearances between the diving boards and the shell of the dive tank meet the standards of NCAA (National Collegiate Athletic Association and the minimum standards of United States Diving / FINA (Federation Internationale De Natation. The standards of NFHS (National Federation of State High School Associations) for the 1-meter board are not met at the back wall, as can be seen in Section View 1. The current Texas Department of State Health Services standards require that a dive tank meet the standards of either United States Diving / FINA (Federation Internationale De Natation, NCAA (National Collegiate Athletic Association, or NFHS (National Federation of State High School Associations). Therefore, the dive tank is in compliance with the current Texas Department of State Health Services standards.

- Both of the Durafirm diving board stands show damage, especially the 1-meter stand. The rail brackets are broken and have been replaced by hose clamps.
- The diving boards are Maxiflex B, which are high performance diving boards.
- The lifeguard stands are of an obsolete design, which are not to today's standards. These stands display severe corrosion.
- Lifeguard safety equipment was in storage.
- The waterslide flumes are reported to leak at the seams. The stairs and support structure display corrosion and are causing staining on the deck and gutter system.
- Except for the small fabric shade structure there is little shade provided at this facility.
- A water fountain, as required by the current Texas Department of State Health Services standards, was not observed. (It was reported that the water fountain was removed from the site during the off-season and has since been re-installed for the 2007 season.)
- After dark this facility is illuminated by 11 overhead light fixtures on 8 poles, spaced around the perimeter. The wattage of these lights is unknown, as is the operational status.
- The pool has 12 stainless steel pool ladders. These are attached to the gutter system and are in good condition and secure.

B. Recommendations

- Before any repairs begin, core samples of the pool shell concrete need to be taken and analyzed for strength.
- Remove PVC liner, repair expected cracks in shell, and perform a water tightness test.
- Due to the expected rough condition of the surface, a quartz aggregate finish (Diamond Brite) is recommended. A quartz aggregate finish is more durable than a PVC lining.
- Provide tile lane markers and wall targets.
- Confirm the slope of the zero depth entry does not exceed 1:12 and modify as needed. The costing provided reflects modifications to entire zero depth entry. Provide floor inlets in this area per the current Texas Department of State Health Services standards.
- Provide battery operated handicap lift. Provide ADA (Americans with Disabilities Act) rails in zero depth area.
- Provide vertical depth markings.
- Tile 4" safety marking on bottom of pool at the shallow to deep water transition. Locate a floating safety line one foot prior to the transition.
- Repair the surge weirs. Clean corrosion on gutter. Replace grating on gutter.
- Provide backflow prevention for all hose bibs. (It is reported that backflow prevention on hose bibs has been provided by staff as annual maintenance for 2007 season.)
- Replace all broken concrete slabs in original deck around perimeter of site.
- Replace Durafirm 1-meter and 3-meter diving stands.

- Provide moveable lifeguard stands.
- Repair waterslide seams, clean corrosion, and paint platform.
- Clean chemical stained pool deck.
- Provide shade umbrellas.
- Staff to confirm all required lifeguard safety items and the necessary number are provided.
- Confirm that overhead lighting meets the current Texas Department of State Health Services standards for night swimming if the pool is to be used at night. Currently, night swimming is not provided.

3. Mechanical System

A. Conditions

- The recirculation pump and motor are not compatible. This system was designed for a pump which operates at 1,170 rpm and is driven by a 50 hp motor. The pump currently in place operates at 1,765 rpm and is being driven by the same 50 hp motor. To operate correctly the 1,765 rpm pump requires a motor capable of producing 172 hp. This is the cause of the cavitation inside the pump, which resulted in the destruction of the pump impeller after only 18 months.
- Valve #3 was reported to be difficult to operate.
- The piping is a mix of cast iron and PVC. A leak was observed on the pressure side of the pump in the pump pit. An underground leak is believed to exist on the west side of the pool as evidenced by the soft soil and dying grass beyond the pool fence and leading down hill.
- The main drain piping does not provide 100% of the flow rate required by the current Texas Department of State Health Services standards.
- The current gutter piping between gutter dropouts and filter does not provide 100% of the flow rate required by the current Texas Department of State Health Services standards.
- Inside the vacuum sand filter, the valves on the ten inch gutter dropout lines are not operational and the valve handles display severe corrosion.
- An air gap between the fill line and the filter vault is provided. The air gap size does not meet the current Texas Department of State Health Services standards. (It is reported that this has been provided by the annual maintenance for the 2007 season by staff.)
- An automatic water level controller is not provided.
- Liquid chlorine is stored in single walled containers. Secondary containment for the chlorine is not provided.
- The Strantrol System 3 chemical controller is no longer manufactured. Replacement parts for these controllers may be difficult to acquire in the future; currently the parts are available through a local vendor.
- Secondary containment is not provided for the muriatic acid.
- Muriatic acid and liquid chlorine are stored in the same room.
- Metal objects inside the chemical room display corrosion.
- An eyewash station is not provided in the chemical room.

- The electrical outlets in the chemical room are not protected by ground fault interrupters (GFI). Current industry design provides GFI protected outlets in mechanical and chemical rooms.

B. Recommendations

- Replace all mechanical equipment.
- Provide surge tank.
- Replace all gutter dropout piping.
- Due to the excavation required for dropout piping, replacement of pressure piping is recommended.
- Main drain piping to remain, pressure test for integrity.
- Provide automatic water level controller.
- Replace existing chemical building with a structure housing the mechanical equipment and separate dedicated chemical rooms for chlorine and acid.
- Replace chemical pumps and provide secondary containment for both chlorine and acid.
- Provide chemical controller and flow cell assembly.
- Provide larger backwash tank.
- Provide the current Texas Department of State Health Services required air gap at fill piping.

4. Bathhouse

A. Conditions

- The painted finish of the floor, walls, and benches are worn and peeling. The pool is painted annually by staff.
- The painted stairs near bathhouse have only one hand rail, which is broken. The small curb section at the top of the stair is a trip hazard.
- Backflow prevention devices not installed on hose bibs. (It is reported that backflow prevention on hose bibs has been provided by staff as annual maintenance for 2007 season.)
- The electrical outlets in the bathhouse are not protected by ground fault interrupters (GFI).
- The bathhouse does not meet the current Texas Department of State Health Services standards.

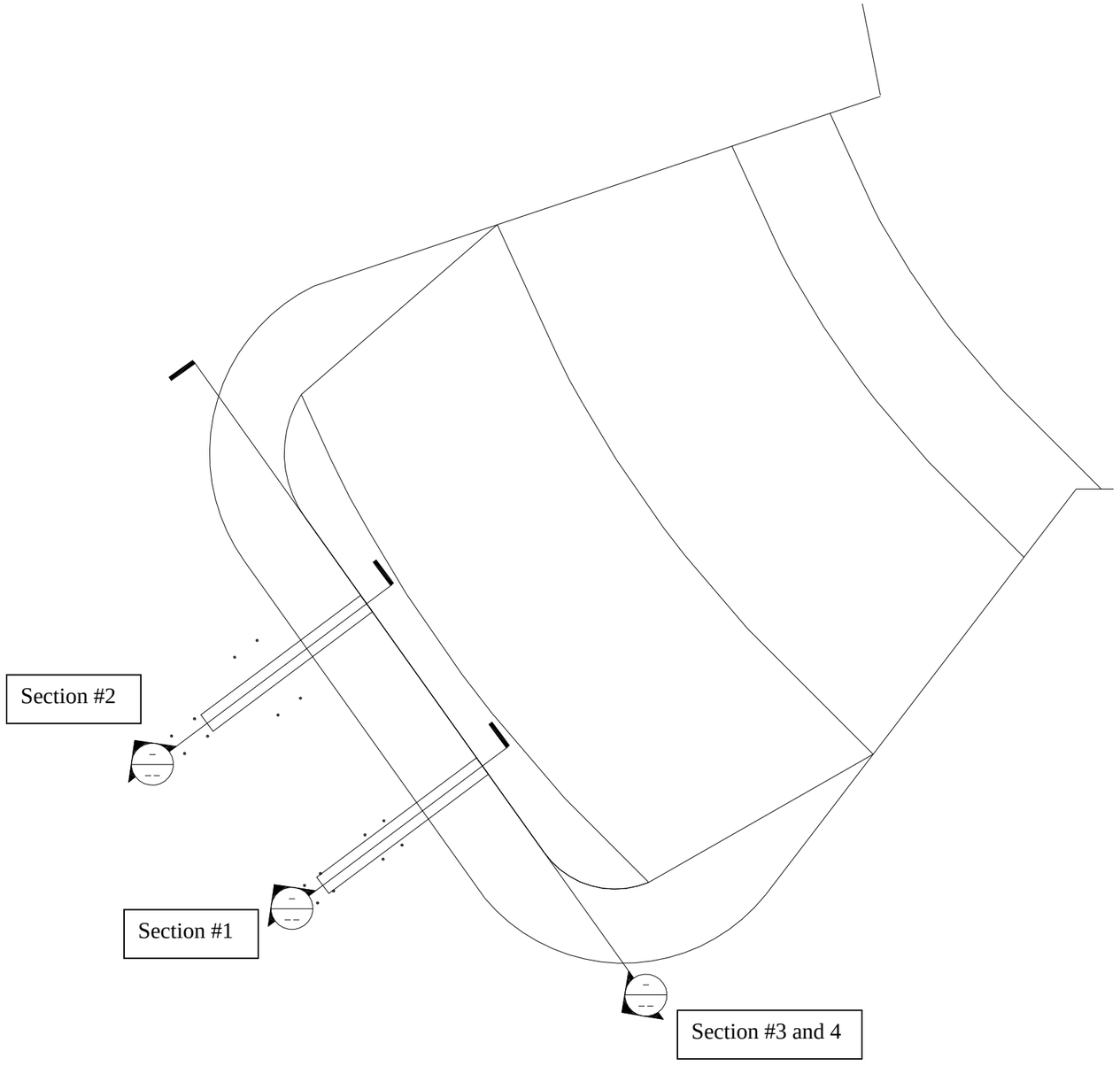
Restroom Fixtures	Provided	Required for Posted Capacity (1,000)	Required for CH Calculated Capacity (1,100)
Male			
Water Closets	1	10	11
Urinals	2	10	11
Lavatories	1	10	11
Showers	2	10	11
Baby Changing Table	0	1	1
Female			

Water Closets	2	20	22
Lavatories	1	10	11
Showers	2	10	11
Baby Changing Table	0	1	1

B. Recommendations

- Replace bathhouse.

5. Diving Board Section Views

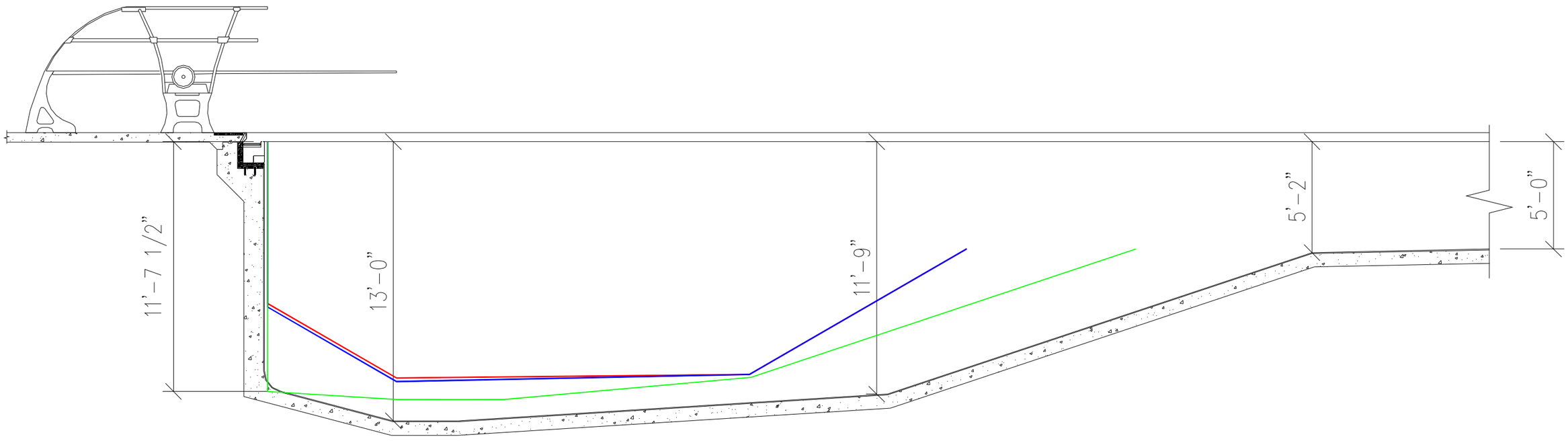


Section View 1: 1-m Diving Board

NFHS – Green Line

USA Diving/FINA Minimum – Blue Line

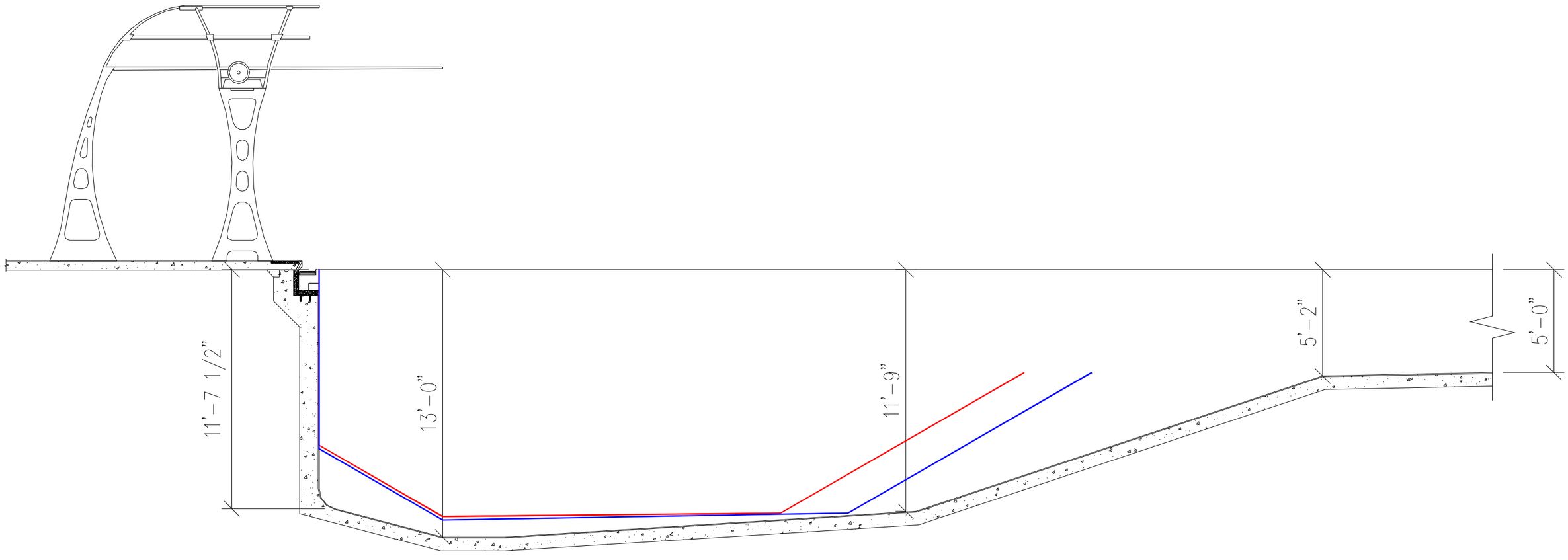
NCAA – Red Line`



Section View 2: 3-m Diving Board

USA Diving/FINA Minimum – Blue Line

NCAA – Red Line`

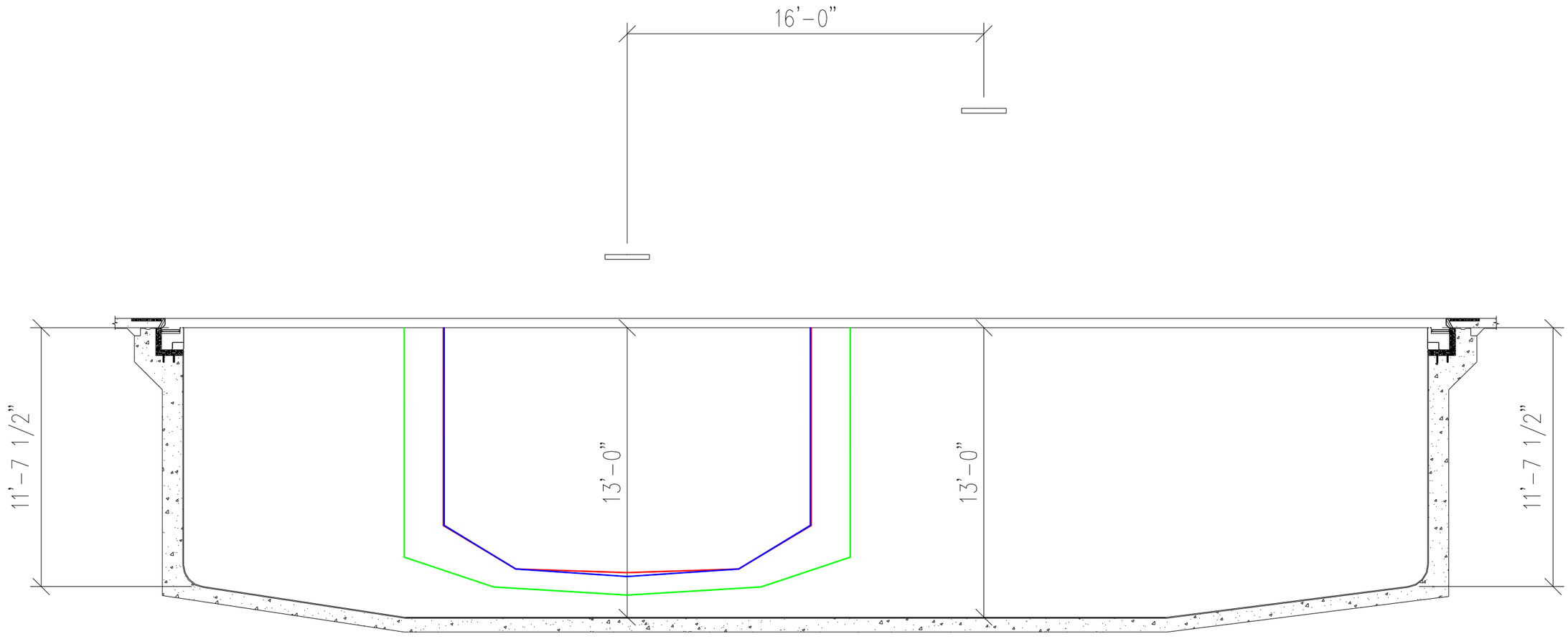


Section View 3: 1-m Diving Board

NFHS – Green Line

USA Diving/FINA Minimum – Blue Line

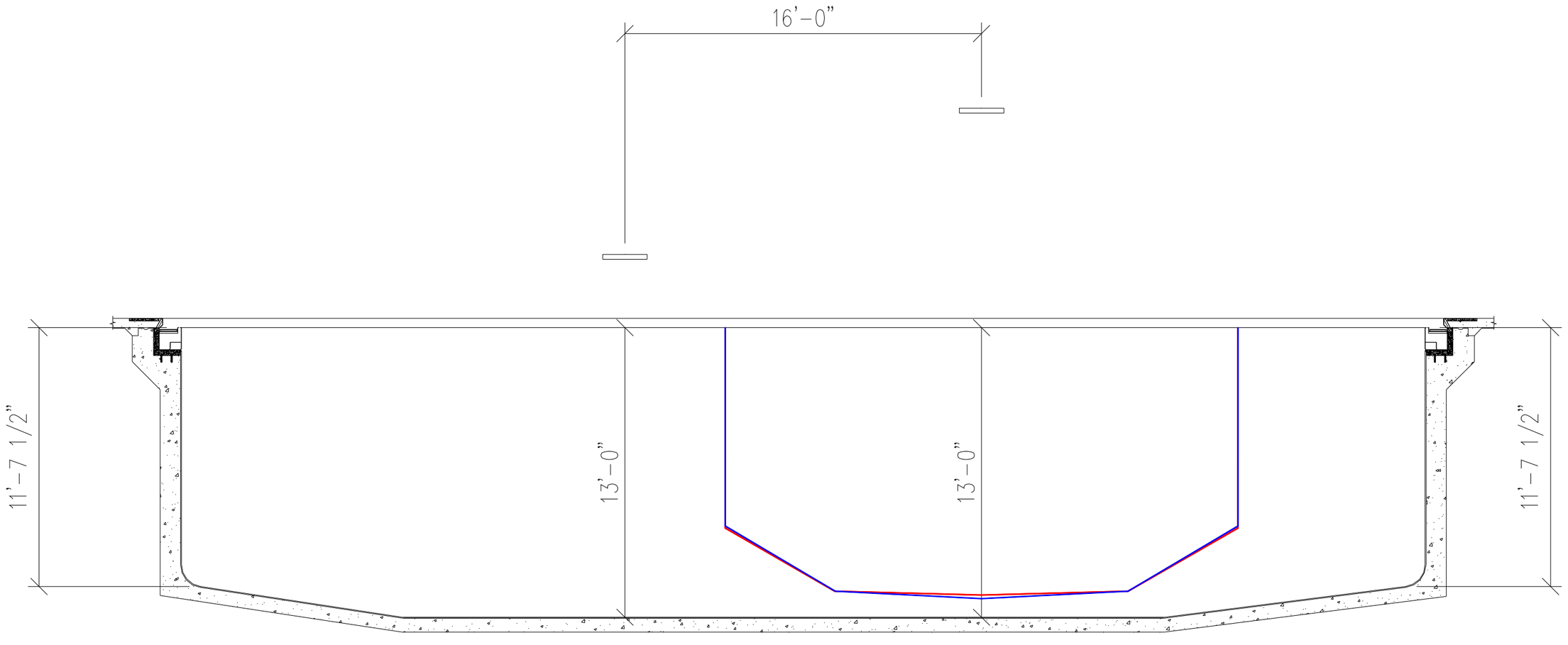
NCAA – Red Line`



Section View 4: 3-m Diving Board

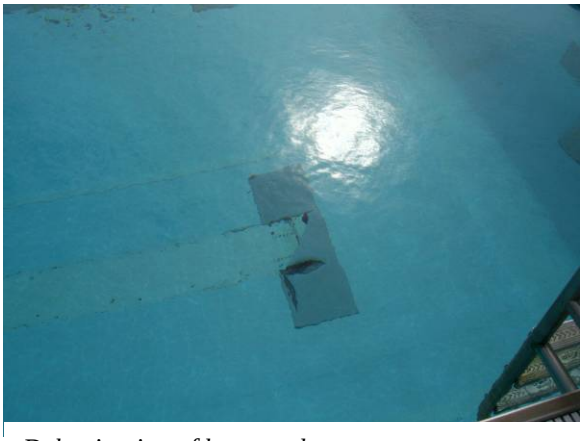
USA Diving/FINA Minimum – Blue Line

NCAA – Red Line`



6. Facility Photographs

Original 1922 pool shell is deteriorating.



Delamination of lane markers.

Large tear in PVC liner at wall target.

Corrosion on stainless steel gutter, mismatched PVC grating.

PVC grating is in poor condition.

Surge weirs are not operating properly.

Chemical staining on deck.

Outer sidewalk shows severe cracking.

Diving stand railing brackets are broken. (Reported to have been repaired in annual maintenance by staff for 2007 season.)

Corrosion on the water slide platform.

Corrosion on water slide equipment causing staining on gutter system.

Electrical outlets without GFI protection.

Single walled chlorine and acid containers stored in the same room.

Impeller damage after 18 months of operation with improper pump/motor combination.

Stairs have only one hand rail, which is broken. There is a trip hazard at the top of the stairs.

Stainless steel vacuum sand filter vault.

Severe corrosion on valve handle.

Pump pit is enclosed by a lockable chain link fence and covered by a roof.

Zero depth entry.

Forest Park Pool.

7. Opinion of Probable Construction Cost

The following spreadsheet provides the Opinion of Probable Construction Cost to repair the pool. Since the pool was constructed in 1967, it is not recommended to allocate extensive renovation dollars to a pool that has a concrete shell that is 40 years old. Replacing the pool would address the physical obsolescence of the pool as well as the functional obsolescence.

	Item	Item Cost
	Pool Items	
1	Remove liner, repair pool shell cracks, and apply quartz aggregate finish with tiled safety line marking at slope change to deep water with floating safety line, and tiled lane line markers and wall targets (provide water tightness test)	$505,943
2	Core test pool shell for integrity	$12,000
3	Modify zero depth entry, provide inlets and ADA rails	$621,000
4	Clean stainless steel gutter, repair surge weirs, replace gutter grating	$48,375
5	Pressure test main drain piping for integrity	$1,000
6	Repair seams, clean corrosion, and paint platform on pool waterslide	$6,500
7	Replace pressure piping from mechanical area to pool and piping from gutter system	$10,000
8	Replace 1-m and 3-m stands	$40,000
9	Provide battery operated handicap lift	$8,000
10	Provide vertical depth markings	$929
11	Replace original deck around perimeter of site (includes demolition)	$142,500
12	Provide movable lifeguard chairs	$32,000
13	Replace mechanical room equipment, pump, motor, filter, flow meter, valves, piping, gauges	$100,000
14	Provide backwash pit	$10,000
15	Provide surge tank	$35,000
16	Replace chemical pumps and provide double wall chlorine tank and spill pans for muriatic acid	$7,000
17	Provide chemical controller with flow cell assembly	$10,000
18	Provide automatic water level controller	$5,000
19	Provide portable eye wash station	$50
20	Provide shade umbrellas	$60,000
21	Replace mechanical area and chemical building with housing for mechanical area and chemical rooms (includes demolition)	$200,000
22	Replace bathhouse (includes demolition)	$490,000
23	**Site Upgrade**	**$250,000**
24	**Subtotal**	**$2,595,297**
25	**15% Contingency**	**$389,295**
26	**Total (2007 USD)**	**$2,984,591**

	Additional Consideration Items	Item Cost
1	Confirm required safety equipment and quantity are provided	Staff to provide
2	Evaluate overhead lighting	Further evaluation needed
3	Clean stained pool deck	Staff to provide

The opinion of probable construction costs is based on current 2007 prices.

The preceding opinion of probable costs estimates are based upon a protocol in which a general contractor or swimming pool contractor executes all of the tasks with its own labor and that of qualified subcontractors.

It is recognized that the Consultant or Owner have no control over the cost of labor, materials or equipment, over the Contractor's methods of determining bid prices, or over competitive bidding, market or negotiating conditions. Accordingly, the Consultant cannot, and does not, warrant or represent that bids or negotiated prices will not vary from the Owner's project budget or from any opinion of construction cost or evaluation prepared or agreed to by the Consultant.

D. LAKE COMO POOL

401 Lake Como Drive

1. Lake Como Pool Commentary

Lake Como Swimming Pool was originally built in 1957 and underwent a renovation in 1994. This renovation included the addition of stainless steel rollout gutters, a Paddock vacuum sand filter, new piping, and new concrete decking. The stainless steel gutter includes the pool inlets, jet washes, and surge weirs. Also during the renovation, the depth of the pool was reduced from 12 feet to 8 feet.

The site was observed on February 20, 2007 and was not in operation during observation. The volume of the pool is approximately 154,000 gallons, and the perimeter is approximately 266 feet. The surface area of the vacuum sand filter is 43.33 ft^2 and the filtration rate is 10.38 gpm/ft^2. This filter is backwashed manually. The flow rate, as shown on the pool drawings, indicate 450 gpm. The velocity of the flow through the 6-inch schedule 40 PVC pipe is also within the current Texas Department of State Health Services standards for both suction and pressure piping. A single 1745 rpm, 7.5 hp pump and motor combination is in use. The pool is estimated to operate at a 5.7 hour turnover rate using the design flow rate. The pool has approximately 4,340 square feet of water surface area with a capacity of 238 bathers. However, the posted capacity is 125 bathers. The average daily attendance at this facility is approximately 60 bathers.

The mechanical equipment operates from within a stainless steel vault recessed into the ground. This vault is located in the mechanical space, which is enclosed by a locked 6' chain link barbed wire fence and covered by a corrugated steel roof. The fill spout is also located in the mechanical space and is positioned to add make up water to the filter. The chemical building is located next to the mechanical space. It is a small painted cinder block building which stores the Strantrol System 3 chemical controller, muriatic acid pH buffer, and Mec-O-Matic chemical feed pumps. This building is also used to store electrical panels, lifeguard equipment, and other loose equipment. The pool sanitizer is sodium hypochlorite (liquid chlorine) and is stored outside the chemical room in the mechanical space. It is appropriate to store the muriatic acid and liquid chlorine in separate locations.

This facility is surrounded by a 6' chain link, barbed wire fence and is furnished with two picnic tables under a small pavilion and three over head lights. The deck drains away from the pool and into the yard through cutouts in the curb or to the deck drains located near the bathhouse. The exposed PVC piping was reported to be free of leaks. The pool has two 18" x 18" main drains which operate within the current Texas Department of State Health Services standards, and one hydrostatic relief valve located inside one of the main drains as reported by staff.

The bathhouse was also renovated and appears to provide handicap access. It is a cinder block building with a painted finish, bare concrete floor, and a drop ceiling. Two hose bibs were observed, one inside the bathhouse and one outside. An emergency phone is located

outside the bathhouse. Water fountain piping was also observed outside the bathhouse. The water fountain has been removed during the off-season and was found inside.

2. Pool and Deck

A. Conditions

- The surface of the pool shell is rough and has been patched multiple times. No major cracks were observed in the structure of the pool shell. It has been reported that this pool loses about one inch of water per day. This amount of water loss is not unusual for an outdoor pool; therefore the pool shell does not appear to be responsible for water loss.
- The shallow end of the pool does not have a consistent slope. The slope can not exceed 1 foot in 10 feet before 5' depth. The shallow end slope does not satisfy the current Texas Department of State Health Services standards.
- Corrosion was observed on the pool shell on the south side of the deep end. This corrosion could be caused by rebar positioned too close to the surface of the pool shell.
- The painted finish shows cracking and chipping.
- There is not a contrasting color on the edge of the stair entry steps as required by the current Texas Department of State Health Services standards.
- The stainless steel handrails at the stair entry are loose.
- The stainless steel ladders were found to be loose, bent, and dented. Some are missing rubber end caps, escutcheon plates, and locking mechanisms.
- An unused deck anchor socket was found. This anchor is believed to be for use with a mechanical pool lift, however, a lift was not observed at the facility.
- This pool is not ADA (Americans with Disabilities Act) handicap accessible.
- Vertical depth markings are not provided on the pool.
- The painted four inch safety line is located after the beginning of the 3:1 slope and does not accurately depict five feet of depth.
- Hair line cracks were observed in the pool deck. One slab has lifted, creating a potential toe stub.
- The portable lifeguard chairs are missing wheels. Some of the rubber end caps are missing as well. Supports are loose.
- The stainless steel gutter displays corrosion. Surge weirs are provided and do not appear to be functioning as designed. The gutter grating has cracked and broken ribs and the grating sections are misaligned in some areas leaving large voids.
- Lifeguard safety equipment was in storage.
- The hose bib on the pool side of bathhouse is not equipped with backflow prevention.
- Except for the small pavilion shade structure there is little shade provided at this facility.
- Three overhead lights are provided for night swimming.

B. Recommendations

- Repair corrosion on pool shell and any rebar that may be the source of the corrosion.
- Remove paint, repair cracks in shell, and perform a water tightness test.
- Due to the rough condition of the surface, a quartz aggregate finish (Diamond Brite) is recommended.
- Before any repairs begin, core samples of the pool shell concrete need to be taken and analyzed for strength.
- Repair the surge weirs. Clean corrosion on gutter. Replace grating on gutter.
- Provide battery operated handicap lift.
- Tighten the stair rails. (It has been reported that this has been repaired by the annual maintenance by staff for the 2007 season.)
- Replace pool ladders.
- Repair lifeguard chairs.
- Provide vertical depth markings on the gutter system.
- Tile contrasting color safety stripe on edge of pool stairs.
- Locate floating safety line one foot prior to slope change. Paint safety line at slope change.
- Staff to confirm all required lifeguard safety items and the necessary number are provided.
- Provide backflow prevention on hose bibs. (It is reported that this has been provided by annual maintenance by staff for the 2007 season.)
- Provide shade umbrellas.
- Confirm that overhead lighting meets the current Texas Department of State Health Services standards for night swimming. Currently, night swimming is not provided.

3. Mechanical System

A. Conditions

- The sand in the vacuum sand filter has never been replaced.
- All of the butterfly valves are operational, but are showing corrosion. Also, they are not labeled. (It has been reported that this has been repaired and labeling provided as annual maintenance by staff for the 2007 season.)
- An air gap between the backwash line and the sanitary sewer is provided. The air gap size does not meet the current Texas Department of State Health Services standards.
- The pool gutter piping does not support 100% of the flow rate as required by the current Texas Department of State Health Services standards.
- An air gap between the fill line and the filter vault is provided. The air gap size does not meet the current Texas Department of State Health Services standards.
- An automatic water level controller is not provided.
- The Strantrol System 3 chemical controller is no longer manufactured. Replacement parts for these controllers may be difficult to acquire.

- Corrosion was observed on the recirculation pump.
- Liquid chlorine is stored in single-walled containers. Secondary containment has not been provided.
- Secondary containment is not provided for the muriatic acid containers.
- An eyewash station is not provided in the chemical room.
- Metal components inside the chemical room display corrosion.
- The electrical outlets in the chemical room are not protected by ground fault interrupters (GFI). Current industry design provides GFI protection in mechanical and chemical rooms.
- An air blower is provided for backwashing the filter. Staff reports that it is not necessary for a thorough backwashing.

B. Recommendations

- Replace sand in the filter.
- Currently, the mechanical system is functioning within the current Texas Department of State Health Services standards and does not appear to need immediate repairs. Mechanical equipment can be expected to be replaced in the future.
- Provide automatic water level controller.
- Provide the current Texas Department of State Health Services required air gap at backwash and fill piping.
- Replace chemical pumps.
- Provide chemical controller and flow cell assembly.
- Provide double walled chlorine tanks.
- Provide spill platform for the muriatic acid containers.
- Provide portable eye wash station.
- Provide GFI outlets in mechanical room.
- Clean corrosion in chemical room and paint.

4. Bathhouse

A. Conditions

- The bathhouse does not meet the current Texas Department of State Health Services standards.

Restroom Fixtures	Provided	Required for Posted Capacity (125)	Required for CH Calculated Capacity (238)
Male			
Water Closets	1	1	3
Urinals	1	1	3
Lavatories	1	2	3
Showers	2	2	3
Baby Changing Table	0	1	1
Female			
Water Closets	1	3	5
Lavatories	1	2	3

Showers	2	2	3
Baby Changing Table	0	1	1

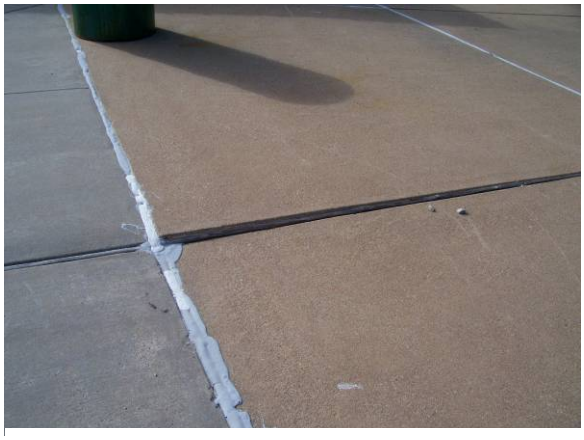
B. Recommendations

- Replace bathhouse.

5. Facility Photographs

Rough pool shell surface

Broken PVC gutter grating



One slab has lifted slightly.

Hair line crack, failing expansion joints

Corrosion believed to be caused by rebar positioned near the pool shell surface, poor joint between stainless steel gutter and concrete pool shell.

The slope of the pool floor can not exceed 1 foot in 10 before 5' depth.

Severe corrosion on recirculation pump

Covered mechanical space and adjoining chemical room.

Pavilion and picnic tables.

Changing area.

Lake Como Pool.

Bathhouse.

6. Opinion of Probable Construction Cost

The following spreadsheet provides the Opinion of Probable Construction Cost to repair the pool. Since the pool was constructed in 1957, it is not recommended to allocate extensive renovation dollars to a pool that has a concrete shell that is 50 years old. Replacing the pool would address the physical obsolescence of the pool as well as the functional obsolescence.

	Item	Item Cost
	Pool Items	
1	Remove paint, repair pool shell (cracks and exposed rebar location), and apply quartz aggregate finish with tiled safety line marking (and anchors) at slope change to deep water and tile safety stripe on edge of stairs (provide water tightness test)	$78,780
2	Core test pool shell for integrity	$7,500
3	Clean stainless steel gutter, repair surge weirs, replace gutter grating	$16,625
4	Replace pool ladders and tighten stair rails	$9,100
5	Provide battery operated handicap lift	$8,000
6	Provide vertical depth markings	$319
7	Replace filter sand	$7,500
8	Replace chemical pumps and provide double wall chlorine tank and spill pans for muriatic acid	$7,000
9	Provide chemical controller with flow cell assembly	$10,000
10	Provide automatic water level controller	$5,000
11	Provide portable eye wash station, GFI outlets in chemical and clean corrosion in chemical room and paint	$9,500
12	Provide shade umbrellas	$24,000
13	Replace bathhouse (includes demolition)	$360,000
14	**Site Upgrade**	**$250,000**
15	**Subtotal**	**$793,324**
16	**15% Contingency**	**$118,999**
17	**Total (2007 USD)**	**$912,323**

	Additional Consideration Items	Item Cost
1	Confirm required safety equipment and quantity are provided	Staff to provide
2	Repair lifeguard chairs	Staff to provide
3	Evaluate overhead lighting	Further evaluation needed

The opinion of probable construction costs is based on current 2007 prices.

The preceding opinion of probable costs estimates are based upon a protocol in which a general contractor or swimming pool contractor executes all of the tasks with its own labor and that of qualified subcontractors.

It is recognized that the Consultant or Owner have no control over the cost of labor, materials or equipment, over the Contractor's methods of determining bid prices, or over competitive bidding, market or negotiating conditions. Accordingly, the Consultant cannot, and does not, warrant or represent that bids or negotiated prices will not vary from the Owner's project budget or from any opinion of construction cost or evaluation prepared or agreed to by the Consultant.

E. MARINE POOL

303 NW 20th Street

1. Marine Pool Commentary

Marine Pool was constructed in 1926 as a fill and drain pool, without a filtration system. A 1983 renovation included the installation of a vacuum sand filter, and the conversion from a single main drain to three. The depth across the pool was reduced during this renovation as well. The original concrete scum gutters are still in use.

This site was observed on February 21, 2007 and was not in operation during observation. The volume of the pool is approximately 454,000 gallons, and the perimeter is approximately 433 feet. The surface area of the vacuum sand filter is 150 ft^2 and the filtration rate is 10.67 gpm/ft^2. A semi-automatic backwash system has been installed and is controlled by an electrical panel in the mechanical area. There are two 15 hp motors and each drives a 1760 rpm pump; one pump is operated for recirculation. The flow rate was reported at approximately 1,000 gpm, which provides a turnover rate of 7.6 hours. This turnover rate does not comply with the current Texas Department of State Health Services standards. The 13,328 square foot surface area has a CH calculated 735 bather load, but the capacity is posted at 275. The average daily attendance at this pool is 163 bathers.

The mechanical equipment is housed within a stainless steel vault recessed into the ground. This vault is located within the mechanical space, a small, uncovered, fenced area behind the chemical room. The fill spout is located in the mechanical space, positioned over the vault to add make up water directly to the filter. The chemical room is a small, painted cinder block building which stores the Strantrol System 3 chemical controller, sodium hypochlorite sanitizer, LMI chlorine feed pump, muriatic acid pH buffer, and the Mec-O-Matic acid feed pump. This room also contains some loose deck equipment. The PVC electrical conduit and brackets in the chemical room are in good condition and the electrical outlets are equipped with GFI protection.

The filter backwash water is collected in a storage tank which drains to waste. It was reported that the water is pumped from the tank to the sanitary sewer.

The facility is surrounded by a 6’ chain link barbed wire fence. The concrete deck is 5’6” wide, with a larger area in front of the chemical room, and a patio at the bathhouse. The bathhouse is made of cinder block, and has a painted finish. The changing areas are both open air. There is an emergency phone located outside the bathhouse, along with hose bibs, and water fountain piping. The water fountain has been removed during the off-season and was found inside the bathhouse. Two overhead security lights were observed, but there is not overhead lighting provided for night swimming.

The caulking between the deck and coping appears to be fairly new. Two of the three main drains contain a hydrostatic relief valve. The velocity through the three 23” main drain

covers is 1.1 feet per second, which satisfies the current Texas Department of State Health Services standards.

2. Pool and Deck

A. Conditions

- Several large cracks exist in the pool shell. The shell also has a very rough surface and has been patched in several places.
- It was reported that this pool loses 8 to 12 inches of water per day. This can be attributed to the extensive cracking, a broken underground pipe, or both. In gallons, the equivalent water loss is between 66,000 and 100,000 gallons per day.
- The painted finish is both cracked and chipped.
- The expansion joints are in need of repair. The joint between the pool floor and wall at the shallow end is also in need of repair.
- The ledge that wraps around the deep end of the pool is 18.5" wide at a 4'7" depth. The ledge exceeds the maximum width allowed by the current Texas Department of State Health Services standards.
- The gutter is a concrete gutter. The gutter surface does not consistently slope toward the drop-outs and evidence of standing water was observed.
- The concrete gutter lip and coping is in poor condition with spalling concrete and a rough finish. This type of gutter is not user friendly making it difficult to exit the pool. The gutter design is obsolete.
- The main drain grates are steel and are not anchored to the pool floor. Due to the weight of the grates, removing a grate is not easily accomplished. The current Texas Department of State Health Services standards require the drain covers to be removed only with the use of a tool. The department of health can be consulted if the covers are to be used in the future. One grate displays corrosion.
- The fill spout housed in a concrete box located on the deck is a trip hazard.
- A pool ADA (Americans with Disabilities Act) lift, ramp, or stairs are not provided. There are four ladders in the deep section and one ladder in the shallow. All of the ladder rails are loose and the ladders in the deep end appear to be a challenge to use with the distance between the bottom tread and the pool bottom. Ladders missing rubber end caps are damaging the pool shell.
- Horizontal and vertical depth markings are provided. Some markings are greater than 25 feet apart which does not satisfy the current Texas Department of State Health Services standards.
- No Diving signs and symbols are provided. Some No Diving markings are greater than 25 feet apart which does not satisfy the current Texas Department of State Health Services standards.
- The depth markers are deceiving at the deep end of the pool because the maximum depth is not indicated.
- A painted four inch safety line marking is provided. The depth is not indicated at the slope change.

- The concrete deck space around the pool is minimal. The deck is cracked in some places and there is some exposed rebar. Wood spacers are provided in the deck joints around the bathhouse. The wood spacers have deteriorated.
- The deck has settled about one half inch on the south side of the pool.
- Some of the area drains located around the pool deck display vegetation.
- Shade structures are not provided on the deck. The trees positioned around the perimeter of the facility will likely provide partial shade.
- The lifeguard stands are of an obsolete design and display corrosion. The stands are difficult to ascend and descend by lifeguards.
- Lifeguard safety equipment was in storage.
- Overhead lighting is not provided around the pool deck for night swimming.

B. Recommendations

- Remove paint, repair cracks in shell, and perform a water tightness test.
- Due to the rough condition of the surface, a quartz aggregate finish (Diamond Brite) is recommended.
- Replace concrete gutter system and gutter piping.
- Modify ledge in deep end of pool to meet the current Texas Department of State Health Services standards.
- Before any repairs begin, core samples of the pool shell concrete need to be taken and analyzed for strength.
- Any modifications to the shell will require review by a structural engineer.
- Replace pool deck. Expanding the pool deck would be appropriate.
- Remove concrete box and fill spout.
- Provide moveable lifeguard chairs.
- Replace depth markings and No Diving signs and symbols according to the current Texas Department of State Health Services standards.
- Indicate maximum water depth.
- Replace ladders.
- Provide battery operated handicap lift. A second form of entry is necessary to satisfy ADA. Provide stair entry with ADA (Americans with Disabilities Act) rails.
- Replace main drains due to piping recommendations below.
- Provide shade umbrellas.
- Staff to confirm all required lifeguard safety items and the necessary number are provided.

3. Mechanical System

A. Conditions

- When the pool was renovated in 1982 the main drain piping was not replaced and continues to be used for the current recirculation system. The original piping is iron. This piping is 81 years old and could be a source of the water loss.

- The pool turnover rate does not satisfy the current Texas Department of State Health Services standard of a 6 hour turnover.
- The pool gutter piping does not support 100% of the flow rate as required by the current Texas Department of State Health Services standards.
- The pool main drain piping does not support 100% of the flow rate as required by the current Texas Department of State Health Services standards.
- An automatic water level controller is not provided.
- The recirculation of the pool is provided by two pumps that are operated simultaneously.
- The valves display corrosion.
- The piping in the filter and pump vault is iron pipe. The pipe displays severe corrosion.
- The sand in the vacuum sand filter was replaced in 2004.
- The tank of the vacuum sand filter is also displays significant corrosion.
- An air gap between the fill line and the filter vault is provided. The air gap size does not meet the current Texas Department of State Health Services standards. (It has been reported that this has been provided for the 2007 season.)
- The Strantrol System 3 chemical controller is no longer manufactured.
- Liquid chlorine is stored in single walled containers. Secondary containment for the chlorine is not provided.
- Secondary containment is not provided for the muriatic acid.
- Muriatic acid and liquid chlorine are stored in the same room.
- A safety grate over the exhaust fan inside the chemical room is not provided.
- Metal objects inside the chemical room display corrosion.
- An eye wash station is not provided in the chemical room.
- The number of inlets required for this pool per the current Texas Department of State Health Services standards is 45; 31 are provided.

B. Recommendations

- Replace main drain piping to mechanical system.
- Replace inlet piping and provide sufficient number of inlet fixtures.
- Replace gutter dropout piping.
- Replace pool mechanical system.
- Provide surge tank.
- Provide chemical controller with flow cell assembly.
- Replace chemical pumps.
- Provide an automatic water level controller.
- Provide a backwash tank.
- Provide the current Texas Department of State Health Services required air gap at fill piping.
- Replace existing chemical building with a structure housing the mechanical equipment and separate dedicated chemical rooms for chlorine and acid.
- Provide double walled chlorine tank.
- Provide spill platform for the muriatic acid containers.

- Provide portable eye wash station.

4. Bathhouse

A. Conditions

- The bathhouse is of a dated design and does not achieve today's standards. It is not ADA (Americans with Disabilities Act) handicap accessible. Passage ways are narrow, and the curb at the shower entrance is a possible trip hazard.
- Part of the floor is painted, part is bare concrete. The paint is peeling, and the floor is cracked in multiple places.
- The entrance to the women's changing area poses a potential trip hazard as the slabs are uneven.
- The bathhouse is at a different elevation to the pool deck. Hand rails are not provided for the two sets of stairs. A barrier is not provided along the front edge of the patio.
- The electrical outlets in the bathhouse are not protected by ground fault interrupters (GFI). (It has been reported that this has been provided for the 2007 season.)
- The hose bibs outside the bathhouse are not equipped for backflow prevention. (It has been reported that this has been provided for the 2007 season.)
- The concrete block walls of the bathhouse are painted and the paint is peeling causing an unsightly condition.
- The bathhouse does not meet the current Texas Department of State Health Services standards.

Restroom Fixtures	Provided	Required for Posted Capacity (275)	Required for CH Calculated Capacity (735)
Male			
Water Closets	1	3	8
Urinals	1	3	8
Lavatories	1	3	8
Showers	1	3	8
Baby Changing Table	0	1	1
Female			
Water Closets	1	6	15
Lavatories	1	3	8
Showers	1	3	8
Baby Changing Table	0	1	1

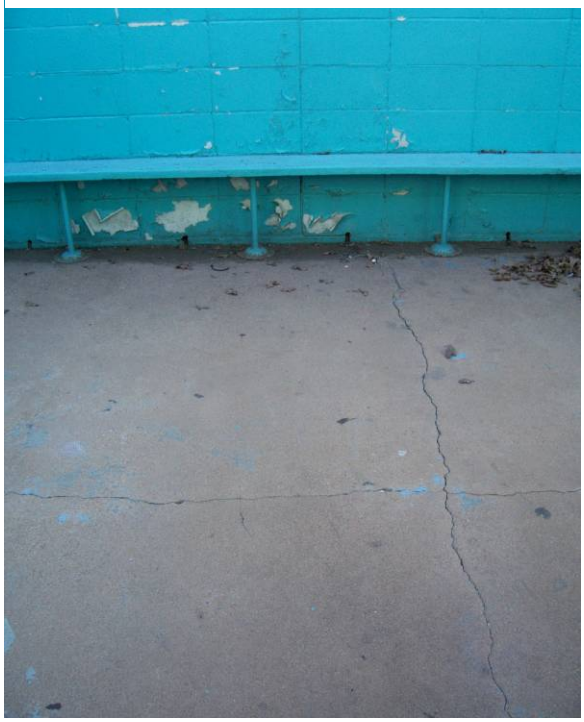
B. Recommendations

- Replace bathhouse.

5. Facility Photographs

Without the rubber feet this ladder is wearing holes into the pool shell. (Reported to be repaired during annual maintenance for 2007 season.)

Area drains are filled with soil and vegetation. (Reported to be repaired during annual maintenance for 2007 season.)



Cracked floor and failing paint in bathhouse. (Reported to be repaired during annual maintenance for 2007 season.)

Failing paint in bathhouse. (Reported to be repaired during annual maintenance for 2007 season.)

Large cracks and rough surface of pool shell.

Large cracks and rough surface of pool shell.

Exposed rebar in pool deck.

Poor condition of deck and coping.

Chemical building.

Corrosion of objects inside pump pit.

Hand rails not provided for stairs. Safety barrier not provided along front edge of patio.

Marine Pool and bathhouse.

6. Opinion of Probable Construction Cost

The following spreadsheet provides the Opinion of Probable Construction Cost to repair the pool. Since the pool was constructed in 1926, it is not recommended to allocate extensive renovation dollars to a pool that has a concrete shell that is 81 years old. Replacing the pool would address the physical obsolescence of the pool as well as the functional obsolescence.

	Item	Item Cost
	Pool Items	
1	Remove paint, repair pool shell cracks, and apply quartz aggregate finish with tiled safety line marking at slope change to deep water and tile safety stripe on edge of stairs (provide water tightness test)	$255,248
2	Core test pool shell for integrity	$10,000
3	Replace gutter with concrete gutter and PVC grating	$216,500
4	Modify deep end ledge	$50,986
5	Replace main drain sumps with hydrostats and replace piping to mechanical area	$30,000
6	Replace gutter dropout piping	$7,000
7	Replace pressure piping from mechanical area to pool and provide required inlets	$23,500
8	Replace pool ladders	$16,000
9	Provide stair entry with ADA rails	$7,000
10	Provide battery operated handicap lift	$8,000
11	Replace horizontal and vertical depth markings and No Diving signs and symbols	$9,526
12	Replace pool deck (includes demolition)	$55,500
13	Provide movable lifeguard chairs	$22,400
14	Replace pool mechanical equipment, pump, motor, filter, flow meter, valves, piping, gauges	$80,000
15	Provide backwash pit	$10,000
16	Provide surge tank	$30,000
17	Replace chemical pumps and provide double wall chlorine tank and spill pans for muriatic acid	$7,000
18	Provide chemical controller with flow cell assembly	$10,000
19	Provide automatic water level controller and remove deck fill spout	$5,500
20	Provide portable eye wash station	$50
21	Provide shade umbrellas	$30,000
22	Replace chemical room with housing for mechanical area and chemical rooms (includes demolition)	$165,000
23	Replace bathhouse (includes demolition)	$440,000
24	**Site Upgrade**	**$250,000**
25	**Subtotal**	**$1,739,209**
26	**15% Contingency**	**$260,881**
27	**Total (2007 USD)**	**$2,000,091**

	Additional Consideration Items	Item Cost
1	Confirm required safety equipment and quantity are provided	Staff to provide

The opinion of probable construction costs is based on current 2007 prices.

The preceding opinion of probable costs estimates are based upon a protocol in which a general contractor or swimming pool contractor executes all of the tasks with its own labor and that of qualified subcontractors.

It is recognized that the Consultant or Owner have no control over the cost of labor, materials or equipment, over the Contractor's methods of determining bid prices, or over competitive bidding, market or negotiating conditions. Accordingly, the Consultant cannot, and does not, warrant or represent that bids or negotiated prices will not vary from the Owner's project budget or from any opinion of construction cost or evaluation prepared or agreed to by the Consultant.

F. SYLVANIA POOL

3801 Maurice Avenue

1. Sylvania Pool Commentary

The Sylvania Pool was originally constructed in 1936 as a fill and drain pool, without a filtration system. A 1983 renovation added a vacuum sand filter and decreased the depth at both ends of the pool. Altering the pool depth has left the current pool bottom with four different slopes. The original pool shell is still exposed in the middle section. The single main drain was replaced with three 18" diameter drains. Water flows through these drains with a velocity of 0.9 feet per second, which is in compliance with the current Texas Department of State Health Services standards. The original concrete scum gutters are still in use.

This site was observed on February 21, 2007 and was not in operation during observation. The volume of the pool is approximately 445,000 gallons, and the perimeter measures approximately 428 feet. The surface area of the vacuum sand filter is 142.5 ft^2 and the filtration rate is 5.61 gpm/ft^2. A semi-automatic backwash system has been installed and is controlled by an electrical panel in the mechanical area. There are two 15 hp motors and each drives a 1760 rpm pump; one pump is operated for recirculation. The flow rate for was reported to be 1,200 gpm, which provides a turnover rate of 6.2 hours. The turnover rate does not comply with the 6 hour turnover rate mandated by the current Texas Department of State Health Services standards. The bather load for this 13,080 square foot pool was calculated by CH to be 744 bathers, but the capacity posted at the site is 275 bathers. It was reported that the average daily attendance at this facility is 176 bathers.

The filter backwash water is collected in a storage tank which drains to waste. It was reported that the water is pumped from the tank to the sanitary sewer.

The mechanical equipment is housed within a stainless steel vault recessed into the ground. This vault is located within the mechanical space, a small uncovered, fenced area behind the chemical room. The fill spout is located in the mechanical space, positioned over the vault to add make up water directly to the filter. The chemical room is a small painted cinder block building which stores the Strantrol System 3 chemical controller, sodium hypochlorite sanitizer, LMI chlorine feed pump, muriatic acid pH buffer, and the Mec-O-Matic acid feed pump. The electrical outlets in this room are equipped with GFI protection.

This facility is surrounded by a 6' chain link barbed wire fence. The concrete deck is 6' wide with a large deck/patio area near the bathhouse. The bathhouse is made of cinder blocks and has a painted finish. The changing areas are both open air. There is an emergency phone located outside the bathhouse, as well as hose bibs. Water fountains are located inside the bathhouse. Area drains are installed on the patio by the bathhouse and around the perimeter of the pool deck. Anchors are provided in the pool for 8 lap lanes. Lighting is not provided for swimming after dark. One 2-meter and two-one meter concrete

diving stands are present. The diving boards have been removed and these stands are no longer used.

2. Pool and Deck

A. Conditions

- The main drains remain operational for recirculation, but the drain line connecting with the storm sewer has been plugged and this pool is no longer able to drain to waste.
- It is reported that there is a broken pipe between the main drain and the filter. At the end of the swim season the pool is left to drain itself. This pool is reported to lose 12 to 18 inches of water per day, which is equivalent to 100,000 – 150,000 gallons (over 25% of the entire pool volume).
- The pool shell bears multiple cracks and patching. The surface of the pool shell is rough and the painted finish is in poor condition.
- The expansion joint is not water tight, and air bubbles are reported to be seen for 3 – 4 days after the pool is filled.
- The ledge that wraps around the deep end of the pool is 18.5" wide at a 4'7" depth. The ledge exceeds the maximum width allowed by the current Texas Department of State Health Services standards.
- The depth markers are deceiving at the deep end of the pool because the maximum depth is not indicated.
- The two-inch concrete scum gutter is in poor condition. The surface is rough, with spalling concrete. The gutter lip is broken in one location and appears to be patched in others. Some of the dropout grates are broken. The gutter surface does not consistently slope toward the drop-outs and evidence of standing water was observed. This type of gutter is not user friendly making it difficult to exit the pool. The gutter design is obsolete.
- The coping is cracked in many places, and has an uneven and rough surface. Gaps exist between the coping and the deck in some locations.
- ADA (Americans with Disabilities Act) access is not provided by stairs or a handicap lift.
- Pool ladders are in poor condition. Some are bent, missing treads with fastening bolts protruding, loosely anchored, and missing the rubber end caps. (This is reported to be repaired during annual maintenance for 2007 season.)
- The transition to deep water begins before the four inch safety marking.
- The deck is in fair condition with a few cracks and some exposed rebar on a couple slabs. There is also some failed caulking in the expansion joints. Spilled paint was observed on the pool deck that is unsightly.
- The bathhouse is at a different elevation to the pool deck. This requires a single step from the bathhouse down to the pool deck. A yellow painted stripe is provided to indicate the change. This appears to be a potential trip hazard.
- The lifeguard stands are of an obsolete design. The stands are difficult to ascend and descend by lifeguards. They also have some corrosion, peeling paint, and loose treads.

- Lifeguard safety equipment was in storage.
- A two-inch fill line is housed by concrete box on the deck. This box is painted yellow, but may still pose a trip hazard. Corrosion staining was observed under the fill spout. Because make up water is supplied at the filter, it appears that this box is no longer necessary.
- Some of the depth markings appear to be more than 25 feet apart as required by the current Texas Department of State Health Services standards.
- Shade structures are not present on the deck. The trees positioned around the perimeter of the facility will likely provide partial shade.
- Overhead lighting is not provided around the pool deck for swimming after dark. There is one overhead security light.

B. Recommendations

- Remove paint, repair cracks in shell, and perform a water tightness test.
- Due to the rough condition of the surface, a quartz aggregate finish (Diamond Brite) is recommended.
- Replace concrete gutter system and gutter piping.
- Modify ledge in deep end of pool to meet the current Texas Department of State Health Services standards.
- Before any repairs begin, core samples of the pool shell concrete need to be taken and analyzed for strength.
- Any modifications to the shell will require review by a structural engineer.
- Replace pool deck. It would be appropriate to expand the deck.
- Remove concrete box and fill spout.
- Provide moveable lifeguard chairs.
- Replace depth markings and No Diving signs and symbols.
- Indicate maximum water depth.
- Replace pool ladders.
- Provide battery operated handicap lift. A second form of entry is necessary to satisfy ADA. Provide stair entry with ADA (Americans with Disabilities Act) rails.
- Locate floating safety line one foot prior to slope change.
- Provide tiled 4” safety line at transition to deep water.
- Staff to confirm all required lifeguard safety items and the necessary number are provided.
- Provide shade umbrellas.
- Replace main drains due to piping recommendations below.

3. Mechanical System

A. Conditions

- The turnover rate at this facility was found to be approximately 6.2 hours, which does not comply with the current Texas Department of State Health Services standard of a 6 hour turnover rate.

- The pool gutter piping does not support 100% of the flow rate as required by the current Texas Department of State Health Services standards.
- The pool main drain piping does not support 100% of the flow rate as required by the current Texas Department of State Health Services standards.
- The recirculation pumps display severe corrosion.
- All of the exposed cast iron piping and valves display extensive corrosion.
- It was reported that replacement parts for the automatic valves are not longer manufactured.
- The Strantrol System 3 chemical controller is no longer manufactured.
- An automatic water level controller is not provided.
- The sand in the vacuum sand filter was replaced in 2003.
- An air gap between the fill line and the filter vault is provided. The air gap size does not meet the current Texas Department of State Health Services standards. (This was reported to be repaired during annual maintenance for 2007 season.)
- Liquid chlorine is stored in single walled containers. Secondary containment for the chlorine is not provided.
- Secondary containment is not provided for the muriatic acid.
- Muriatic acid and liquid chlorine are stored in the same room.
- There is not a grate over the exhaust fan on the inside of the chemical room.
- Metal components inside the chemical room display corrosion.
- An eye wash station is not provided in the chemical room.
- The number of inlets required for this pool per the current Texas Department of State Health Services standards is 45; 25 are provided.

B. Recommendations

- Replace main drain piping to mechanical system.
- Replace inlet piping and provide sufficient inlet fixtures.
- Replace gutter dropout piping.
- Replace pool mechanical system.
- Provide surge tank.
- Provide an automatic water level controller.
- Provide a backwash tank.
- Provide the current Texas Department of State Health Services required air gap at the fill piping.
- Replace existing chemical building with a structure housing the mechanical equipment and separate dedicated chemical rooms for chlorine and acid.
- Replace chemical pumps.
- Provide chemical controller and flow cell assembly.
- Provide double walled chlorine tanks.
- Provide spill platform for the muriatic acid containers.
- Provide portable eye wash station.

4. Bathhouse

A. Conditions

- The bathhouse is of a dated design and does not achieve today's standards. It is not handicap accessible. Passage ways are narrow, and the curb at the shower entrance is a possible trip hazard.
- Part of the floor is painted, part is bare concrete. The paint is peeling, and the floor is cracked in multiple places.
- The electrical outlets in the bathhouse are not protected by ground fault interrupters (GFI). (This was reported to be provided during annual maintenance for 2007 season.)
- An electrical power line was observed running over the restroom changing area.
- The bathhouse is at a different elevation to the pool deck. This requires a single step from the bathhouse down to the pool deck. A yellow painted stripe is provided to indicate the change. This appears to be a potential trip hazard.
- The bathhouse does not meet the current Texas Department of State Health Services standards.

Restroom Fixtures	Provided	Required for Posted Capacity (275)	Required for CH Calculated Capacity (744)
Male			
Water Closets	1	3	8
Urinals	1	3	8
Lavatories	1	3	8
Showers	1	3	8
Baby Changing Table	0	1	1
Female			
Water Closets	1	6	15
Lavatories	1	3	8
Showers	1	3	8
Baby Changing Table	0	1	1

B. Recommendations

- Replace bathhouse.

5. Facility Photographs

Multiple patches and rough condition of pool shell

Broken gutter lip.

Multiple patches and rough condition of pool shell.

Spalling concrete along gutter lip.

Ladders are in poor condition. (Reported to be repaired during annual maintenance for 2007 season.)

Exposed rebar in pool deck.

Automatic valves are in poor condition. Replacement parts are no longer manufactured.

Chemical room.

Bathhouse.

Step in front of bathhouse without handrails.

Changing area.

Sylvania Pool.

6. Opinion of Probable Construction Cost

The following spreadsheet provides the Opinion of Probable Construction Cost to repair the pool. Since the pool was constructed in 1936, it is not recommended to allocate extensive renovation dollars to a pool that has a concrete shell that is 71 years old. Replacing the pool would address the physical obsolescence of the pool as well as the functional obsolescence.

	Item	Item Cost
	Pool Items	
1	Remove paint, repair pool shell cracks, and apply quartz aggregate finish with tiled safety line marking at slope change to deep water (provide water tightness test)	$256,085
2	Core test pool shell for integrity	$10,000
3	Replace gutter with concrete gutter and PVC grating	$214,000
4	Modify deep end ledge	$33,598
5	Replace main drain sumps with hydrostats and replace piping to mechanical area	$30,000
6	Replace dropout gutter piping	$7,000
7	Replace pressure piping from mechanical area to pool and provide required inlets	$23,500
8	Replace pool ladders	$19,000
9	Provide stair entry with ADA rails	$7,000
10	Provide battery operated handicap lift	$8,000
11	Replace horizontal and vertical depth markings and No Diving signs and symbols	$9,416
12	Replace pool deck (includes demolition and removal of diving stands)	$96,000
13	Provide movable lifeguard chairs	$22,400
14	Replace pool mechanical equipment, pump, motor, filter, flow meter, valves, piping, gauges	$80,000
15	Provide backwash pit	$10,000
16	Provide surge tank	$30,000
17	Replace chemical pumps and provide double wall chlorine tank and spill pans for muriatic acid	$7,000
18	Provide chemical controller with flow cell assembly	$10,000
19	Provide automatic water level controller and remove deck fill spout	$5,500
20	Provide portable eye wash station	$50
21	Provide shade umbrellas	$30,000
22	Replace chemical room with housing for mechanical area and chemical rooms (includes demolition)	$165,000
23	Replace bathhouse (includes demolition)	$440,000
24	**Site Upgrade**	**$250,000**
25	**Subtotal**	**$1,763,549**
26	**15% Contingency**	**$264,532**
27	**Total (2007 USD)**	**$2,028,081**

	Additional Consideration Items	Item Cost
1	Confirm required safety equipment and quantity are provided	Staff to provide

The opinion of probable construction costs is based on current 2007 prices.

The preceding opinion of probable costs estimates are based upon a protocol in which a general contractor or swimming pool contractor executes all of the tasks with its own labor and that of qualified subcontractors.

It is recognized that the Consultant or Owner have no control over the cost of labor, materials or equipment, over the Contractor's methods of determining bid prices, or over competitive bidding, market or negotiating conditions. Accordingly, the Consultant cannot, and does not, warrant or represent that bids or negotiated prices will not vary from the Owner's project budget or from any opinion of construction cost or evaluation prepared or agreed to by the Consultant.

G. SYCAMORE POOL

1000 Beach Street

1. Sycamore Pool Commentary

The Sycamore Pool was constructed in 1926 as a fill and drain pool, without a filtration system. A 1982 renovation included the installation of a vacuum sand filter and reduced the depth across the entire pool. In 1999, the pool finish was sandblasted and coated with epoxy paint. The original scum gutters are still in use. Anchors are provided in the pool for 8 lap lanes.

This site was observed on February 21, 2007 and was not in operation during observation. The volume of the pool is approximately 406,000 gallons, and the perimeter measures approximately 438 feet. The surface area of the vacuum sand filter is 101 ft^2 and the filtration rate is 7.9 gpm/ft^2. A semi-automatic backwash system has been installed and is controlled by an electrical panel in the mechanical area. There are two 15 hp motors which drives a 1760 rpm pump; one pump is operated for recirculation. The flow rate for this facility was reported to be 1,200 gpm, which provides a turnover rate of 5.6 hours. The turnover rate complies with the 6 hour turnover rate mandated by the current Texas Department of State Health Services standards. The bather load for this 13,606 square foot pool was calculated by CH to be 816 bathers, but the capacity posted at the site is 275 bathers. It was reported that the average daily attendance at this facility is 111 bathers.

Water passes through the three 18" diameter main drains with a velocity of 0.9 feet per second, which is well within the current Texas Department of State Health Services standard of 1.5 feet per second.

The mechanical equipment is housed within a stainless steel vault recessed into the ground. This vault is located within the mechanical space, a small uncovered, fenced area behind the chemical room. The fill spout is located in the mechanical space, positioned over the vault to add make up water directly to the filter. The chemical room is a small painted cinder block building which stores the Strantrol System 3 chemical controller, sodium hypochlorite sanitizer, LMI chlorine feed pump, muriatic acid pH buffer, and the Mec-O-Matic acid feed pump.

The filter backwash water is collected in a storage tank which drains to waste. It was reported that the water is pumped from the tank to the sanitary sewer.

This facility is surrounded by a 6' chain link barbed wire fence. The concrete deck is 12' wide with a large deck/patio area near the bathhouse. There are area drains in the deck at the shallow end of the pool, and at the deep end of the pool the deck slopes such that water drains towards the yard. The bathhouse is made of cinder blocks and has a painted finish. The changing areas are both open air. There is an emergency phone located outside the bathhouse, as well as hose bibs. Water fountains are located inside the bathhouse. Lighting is not provided for swimming after dark. Two overhead security lights are provided.

2. Pool and Deck

A. Conditions

- The pool shell has extensive amounts of cracking and patch work. Much of the patch work is now failing. The surface is rough across the entire pool. The surface of the pool shell is rough and the painted finish is in poor condition.
- It was reported that the pool loses 6 to 10 inches of water per day. This can be attributed to the extensive cracking and patching but it could also be caused by a broken underground pipe, main drain sump, gutters, or any combination. In gallons, the equivalent water loss is between 40,000 and 67,000 per day.
- Rust staining was observed on the pool shell at two locations. This is probably due to corroding reinforcing steel close to the surface of the pool shell.
- The ledge that wraps around the deep end of the pool is 18.5" wide at a 5' depth. The ledge exceeds the maximum width allowed by the current Texas Department of State Health Services standards.
- The slope from the bottom of the ledge (7' 1" depth) to the 11' depth is greater than a 3:1 slope. A 3:1 slope is the maximum allowed by the current Texas Department of State Health Services standards.
- The depth markers are deceiving at the deep end of the pool because the maximum depth is not indicated.
- The caulk seal between the coping and the pool deck is failing in places, allowing water behind the pool shell. The caulking in the expansion joints is also failing.
- The fill spout housed in a concrete box located on the deck is a trip hazard.
- The steel main drain covers display corrosion. The open area has been reduced by numerous layers of paint.
- One of the gutter drains is reported to be under pressure, and functions as an inlet instead of a drain.
- The deck is settling, up to two inches below the coping in some locations. The deck also shows significant cracking near the bathhouse.
- The railings at the stair entries are loose, and the stair nosing is not of a contrasting color. (The loose railings were reported to be repaired during annual maintenance for the 2007 season.)
- The three pool ladders are all loosely anchored, missing locking mechanisms and escutcheon plates. In addition, one ladder has been removed, one is missing a rung, one is bent, and one has a makeshift rung made from a piece of small rope. (These items were reported to be repaired during annual maintenance for the 2007 season.)
- A handicap lift is not provided at this facility.
- Some depth markers were measured to be more than 25 feet apart. This violates the current Texas Department of State Health Services standards.
- The bathhouse is at a different elevation to the pool deck. This requires two steps from the bathhouse down to the pool deck. Yellow painted stripes are

provided to indicate the change. This appears to be a potential trip hazard. The sidewalk ramp has only one hand rail; this is also a safety concern.

- Shade structures are not present on the deck. The trees positioned around the perimeter of the facility will likely provide partial shade.
- The lifeguard stands are of an obsolete design and display corrosion. The stands are difficult to ascend and descend by lifeguards.
- Lifeguard safety equipment was in storage.

B. Recommendations

- Modify ledge in deep end of pool to meet the current Texas Department of State Health Services standards.
- Modify pool shell slope from ledge to deepest section with a slope that meets the current Texas Department of State Health Services standards.
- Before any repairs begin, core samples of the pool shell concrete need to be taken and analyzed for strength.
- Any modifications to the shell will require review by a structural engineer.
- Remove paint, repair cracks in shell, and perform a water tightness test.
- Due to the rough condition of the surface, a quartz aggregate finish (Diamond Brite) is recommended.
- Replace concrete gutter and gutter piping.
- Replace main drains due to piping recommendations below.
- Replace pool deck. Expanding the deck would be appropriate.
- Remove concrete box and fill spout.
- Provide moveable lifeguard stands.
- Replace depth markings and No Diving signs and symbols according to the current Texas Department of State Health Services standards.
- Indicate maximum water depth.
- Replace ladders.
- Provide battery operated handicap lift. Replace stairs and include ADA (Americans with Disabilities Act) rails.
- Provide shade umbrellas.
- Staff to confirm all required lifeguard safety items and the necessary number are provided.

3. Mechanical System

A. Conditions

- The buried pressure piping is PVC. Red sand is reported to flow from three inlets in the deep end after backwashing indicating a possible pipe break. (The inlets were reported to be repaired during annual maintenance for the 2007 season.)
- All of the valves, both automatic and manual, display extensive corrosion, as are the valve handles.
- The cast iron piping in the pump/filter pit displays severe corrosion.
- Both of the recirculation pumps display corrosion.

- The Strantrol System 3 chemical controller is no longer manufactured.
- An automatic water level controller is not provided.
- The sand in the vacuum sand filter has never been replaced.
- An air gap between the fill line and the filter vault is provided. The air gap size does not meet the current Texas Department of State Health Services standards. (It is reported this has been provided during annual maintenance for 2007 season.)
- Liquid chlorine is stored in single walled containers. Secondary containment for the chlorine is not provided.
- Secondary containment is not provided for the muriatic acid.
- Muriatic acid and liquid chlorine are stored in the same room.
- There is not a grate over the exhaust fan on the inside of the chemical room.
- Metal objects inside the chemical room display corrosion.
- An eye wash station is not provided in the chemical room.
- The number of inlets required for this pool per the current Texas Department of State Health Services standards is 36; 30 are provided.

B. Recommendations

- Replace main drain piping to mechanical system.
- Replace inlet piping and provide sufficient inlet fixtures.
- Replace gutter dropout piping.
- Replace pool mechanical system.
- Provide surge tank.
- Provide an automatic water level controller.
- Provide a backwash tank.
- Provide the current Texas Department of State Health Services required air gap at fill piping.
- Replace existing chemical building with a structure housing the mechanical equipment and separate dedicated chemical rooms for chlorine and acid.
- Replace chemical pumps.
- Provide chemical controller and flow cell assembly.
- Provide double walled chlorine tanks.
- Provide spill platform for the muriatic acid containers.
- Provide portable eye wash station.

4. Bathhouse

A. Conditions

- The bathhouse is of a dated design and does not achieve today's standards. It is not handicap accessible. Passage ways are narrow, and the curb at the shower entrance is a possible trip hazard.
- Part of the floor is painted, part is bare concrete. The paint is peeling, and the floor displays minor cracking.
- The electrical outlets in the bathhouse are not protected by ground fault interrupters (GFI). (It is reported to be provided for the 2007 season.)

- Hose bibs located outside the bathhouse are not fitted with backflow prevention. (It is reported to be repaired during annual maintenance for 2007 season.)
- The bathhouse does not meet the current Texas Department of State Health Services standards.

Restroom Fixtures	Provided	Required for Posted Capacity (275)	Required for CH Calculated Capacity (816)
Male			
Water Closets	1	3	8
Urinals	1	3	8
Lavatories	1	3	8
Showers	1	3	8
Baby Changing Table	0	1	1
Female			
Water Closets	1	6	17
Lavatories	1	3	8
Showers	1	3	8
Baby Changing Table	0	1	1

B. Recommendations

- Replace bathhouse.

5. Facility Photographs

Patching in deck is failing.

Rough condition of deck.

Mechanical space.

Sidewalk ramp with only one handrail.

Slope along back wall of deep end violates 3:1 current Texas Department of State Health Services regulations.

Sycamore pool.

Bathhouse.

Inside the bathhouse.

Paint in bathhouse is in poor condition. (Reported to be repaired during annual maintenance for 2007 season.)

6. Opinion of Probable Construction Cost

The following spreadsheet provides the Opinion of Probable Construction Cost to repair the pool. Since the pool was constructed in 1926, it is not recommended to allocate extensive renovation dollars to a pool that has a concrete shell that is 81 years old. Replacing the pool would address the physical obsolescence of the pool as well as the functional obsolescence.

	Item	Item Cost
	Pool Items	
1	Remove paint, repair pool shell cracks, and apply quartz aggregate finish with tiled safety line marking at slope change to deep water and tile safety stripe on edge of stairs (provide water tightness test)	$261,563
2	Core test pool shell for integrity	$10,000
3	Replace gutter with concrete gutter and PVC grating	$219,000
4	Modify deep end ledge	$217,759
	Modify pool shell slope from ledge to deepest section	$45,000
5	Replace main drain sumps with hydrostats and replace piping to mechanical area	$30,000
6	Replace dropout gutter piping	$7,000
7	Replace pressure piping from mechanical area to pool and provide required inlets	$23,500
8	Replace pool ladders	$13,000
9	Replace stairs including ADA rails	$25,000
10	Provide battery operated handicap lift	$8,000
11	Replace horizontal and vertical depth markings and No Diving signs and symbols	$9,636
12	Replace pool deck (includes demolition)	$147,600
13	Provide movable lifeguard chairs	$19,200
14	Replace pool mechanical equipment, pump, motor, filter, flow meter, valves, piping, gauges	$80,000
15	Provide backwash pit	$10,000
16	Provide surge tank	$30,000
17	Replace chemical pumps and provide double wall chlorine tank and spill pans for muriatic acid	$7,000
18	Provide chemical controller with flow cell assembly	$10,000
19	Provide automatic water level controller and remove deck fill spout	$5,500
20	Provide portable eye wash station	$50
21	Provide shade umbrellas	$30,000
22	Replace chemical room with housing for mechanical area and chemical rooms (includes demolition)	$165,000
23	Replace bathhouse (includes demolition)	$440,000
24	**Site Upgrade**	**$250,000**
25	**Subtotal**	**$2,063,808**
26	**15% Contingency**	**$309,571**
27	**Total (2007 USD)**	**$2,373,379**

	Additional Consideration Items	Item Cost
1	Confirm required safety equipment and quantity are provided	Staff to provide

The opinion of probable construction costs is based on current 2007 prices.

The preceding opinion of probable costs estimates are based upon a protocol in which a general contractor or swimming pool contractor executes all of the tasks with its own labor and that of qualified subcontractors.

It is recognized that the Consultant or Owner have no control over the cost of labor, materials or equipment, over the Contractor's methods of determining bid prices, or over competitive bidding, market or negotiating conditions. Accordingly, the Consultant cannot, and does not, warrant or

represent that bids or negotiated prices will not vary from the Owner's project budget or from any opinion of construction cost or evaluation prepared or agreed to by the Consultant.

H. KELLIS POOL

4651 S. Ridge Terrace

1. Kellis Pool Commentary

Kellis Pool was constructed in 1960, and the original pool shell is still in use. Various renovations have brought to the facility a high rate sand filtration system, new piping, new skimmers and non-slip hand-hold coping, and a new concrete deck.

This site was observed on February 22, 2007 and was not in operation during observation. The volume of the pool is approximately 124,000 gallons, and the perimeter is approximately 225 feet. The total surface area of the three Triton TR-100 fiberglass high rate sand filters is 15 ft^2 and the filtration rate is a maximum of 20 gpm/ft^2. These filters are backwashed manually. There is one 5 hp motor which drives a 3,450 rpm pump. Using the filter surface area and the maximum filtration rate, the estimated flow rate is 300 gpm with a turnover rate of 6.9 hours. This does not meet the current Texas Department of State Health Services standard of a 6 hour turnover. The 2,940 square foot pool has a 152 bather capacity as allowed by the current Texas Department of State Health Services standards. Although a capacity sign was not posted, it was reported that the capacity at this site is 125 bathers. The average daily attendance for this facility was reported to be approximately 55 bathers.

The mechanical equipment resides in a chain link enclosure. The filters, pump, motor, Strantrol System 3 chemical controller, sodium hypochlorite sanitizer, muriatic acid pH buffer, Meg-O-Matic chlorine and acid feed pumps, and Stingl Switch are all stored in this mechanical space. The Stingl Switch has been installed to help prevent possible entrapment of a bather at the main drain. The exposed piping in the mechanical area is PVC, a mix of schedule 40 and schedule 80 pipe. Make up water is added directly the pool and the fill spout is located over the deep end, with an acceptable air gap.

The facility is enclosed by a 6’ chain link barbed wire fence. The concrete deck is 5’ wide with a larger area in front of the bathhouse. The bathhouse is made of cinder block and has a painted finish. A changing area is not provided at this facility. A single baby changing table is provided in the men’s restroom. There is an emergency phone located inside the lifeguard office. One hose bib is located outside the bathhouse. A water fountain was not observed on this site. Overhead lighting is not provided for night swimming.

2. Pool and Deck

A. Conditions

- The surface of the pool shell is rough and has been patched multiple times. One long crack was observed in the pool shell. It has been reported that this pool loses about 1.25” of water per day. This amount of water loss is not unusual for an outdoor pool; therefore the pool shell does not appear to be responsible for water loss.

- The pool has one main drain. The main drain is covered with an anti-vortex drain cover. This PVC cover is anchored down, but is loosely fitted. (It is reported to be repaired during annual maintenance for 2007 season.)
- The velocity of the flow through this 12" x 12" cover is 1.75 feet per second and is not in compliance with the current Texas Department of State Health Services standard of 1.5 feet per second.
- The main drain does not have a diagonal measurement of 24" as required by TDHS.
- Thirteen small holes, purpose unknown, were found around the perimeter of the pool and are causing corrosion staining on the pool finish.
- Two pipes found near the main drain have been capped and are no longer in use. The former function of these pipes is unknown, but it is believed that they were used as drains at one time. The pipes protrude from the bottom of the pool and are a safety issue.
- The concrete coping shows some pitting. The sealant along the coping does not appear to be water tight.
- The seven skimmers do not have weirs. The skimmer weir allows the skimmer to draw pool water from the water surface and therefore cleans the surface debris. The skimmer baskets are brittle. (It is reported the baskets were replaced during annual maintenance for 2007 season.)
- Some of the inlets are missing the directional eyeball.
- Three pool ladders are provided; some are missing escutcheon plates, locking mechanisms, and rubber end caps. One of the ladders is loosely anchored and one has loose treads. (It is reported to be repaired during annual maintenance for 2007 season.)
- A painted four inch safety line is provided at the 5' depth. The floating safety line anchors are provided a depth of 6'. This is in violation of the current Texas Department of State Health Services standard.
- The caulking in the expansion joints between the bathhouse and the pool is not water tight.
- This pool is not ADA (Americans with Disabilities Act) accessible.
- The fill spout, located at the deep end of the pool, is a trip hazard. Insulation has been wrapped around the fill spout. The current Texas Department of State Health Services standards require a soft pliable end on the fill spout.
- Shade structures are not provided on the deck.
- Lifeguard safety equipment was in storage.

B. Recommendations

- Before any repairs begin, core samples of the pool shell concrete need to be taken and analyzed for strength.
- Remove paint, repair cracks in shell, repair holes and fill; perform a water tightness test.
- Due to the rough condition of the surface, a quartz aggregate finish (Diamond Brite) is recommended.
- Provide two main drain sumps and covers.

- Remove the two protruding pipes in the deep end of the pool.
- Replace caulking as necessary for the deck. (It is reported to be repaired during annual maintenance for 2007 season.)
- Provide skimmer weirs and replace skimmer baskets. (It is reported to be repaired during annual maintenance for 2007 season.)
- Staff to confirm all required lifeguard safety items and the necessary number are provided.
- Repair pool ladders. (It is reported to be repaired during annual maintenance for 2007 season.)
- Provide tiled 4" safety line at transition to deep water.
- Provide anchors for the floating safety line 1' prior to 5' depth.
- Provide battery operated handicap lift.
- Provide shade umbrellas.

3. Mechanical System

A. Conditions

- The turnover rate at this facility was found to be approximately 6.9 hours, which does not comply with the current Texas Department of State Health Services standard of a 6 hour turnover rate.
- The suction and pressure piping exceeds the maximum velocity requirement of the current Texas Department of State Health Services standards.
- The pool gutter piping does not support 100% of the flow rate as required by the current Texas Department of State Health Services standards.
- The pool main drain piping does not support 100% of the flow rate as required by the current Texas Department of State Health Services standards.
- With the filter operating at the maximum flow allowed (20 gpm/ft^2) the pool has a 6.9 hour turnover rate. Typically, high rate sand filters are designed with a 15 gpm/ft^2 flow which would be a 9.2 hour turnover. At both 20 gpm/ft^2 and 15 gpm/ft^2 the turnover rate does not meet the current Texas Department of State Health Services standard of a 6 hour turnover.
- The piping is PVC. Both the pump and strainer display corrosion.
- The sand in the high rate sand filters has never been replaced.
- A backwash tank is not provided.
- An air gap between the backwash line and the sanitary sewer is provided. The air gap size does not meet the current Texas Department of State Health Services standards. (It is reported to be repaired during annual maintenance for 2007 season.)
- The Strantrol System 3 chemical controller is no longer manufactured.
- An automatic water level controller is not provided.
- Liquid chlorine is stored in a single walled container. Secondary containment for the chlorine is not provided.
- An eye wash station is not provided in the mechanical area.
- The electrical outlets in the mechanical area are not protected by ground fault interrupters (GFI).

- The pool has 7 inlets and 10 are required by the current Texas Department of State Health Services standards.

B. Recommendations

- Replace main drain piping to mechanical system.
- Replace skimmer piping.
- Replace inlet piping and provide sufficient inlet fixtures.
- Replace pool mechanical system.
- Provide an automatic water level controller and remove fill spout from deck.
- Provide a backwash tank.
- Provide the current Texas Department of State Health Services required air gap between backwash line and sanitary sewer.
- Replace existing mechanical area with a structure housing the mechanical equipment and separate dedicated chemical rooms for chlorine and acid.
- Replace chemical pumps.
- Provide chemical controller and flow cell assembly.
- Provide double walled chlorine tank.
- Provide spill platform for the muriatic acid containers.
- Provide portable eye wash station.

4. Bathhouse

A. Conditions

- The bathhouse is not ADA (Americans with Disabilities Act) accessible.
- One hose bib is located outside the bathhouse; it is not fitted with backflow prevention. (It is reported to be repaired during annual maintenance for 2007 season.)
- The electrical outlets in the bathhouse are not protected by fault interrupters (GFI). (It is reported to be provided for the 2007 season.)
- Showers are not provided in the bathhouse.
- Paint on the exterior of the bathhouse is rough and peeling. (It is reported to be repaired during annual maintenance for 2007 season.)
- The bathhouse does not meet the current Texas Department of State Health Services standards.

Restroom Fixtures	Provided	Required for Reported Capacity (125)	Required for CH Calculated Capacity (152)
Male			
Water Closets	1	2	2
Urinals	1	2	2
Lavatories	1	2	2
Showers	0	2	2
Baby Changing Table	1	1	1
Female			
Water Closets	2	3	4
Lavatories	1	2	2
Showers	0	2	2
Baby Changing Table	0	1	1

B. Recommendations

- Replace bathhouse.

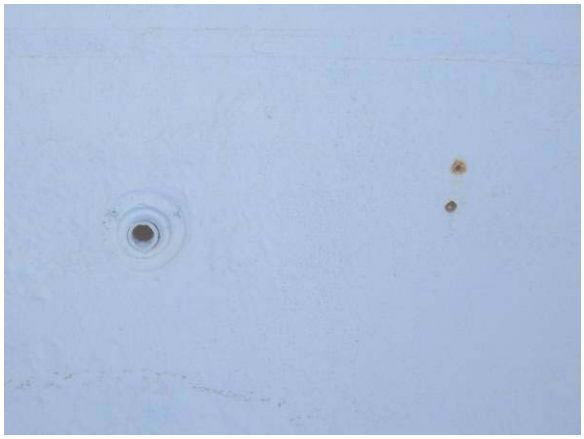
5. Facility Photographs

Rough condition of pool deck.

Rough condition of pool deck.

Pool crack repairs are failing.

Objects protruding through pool shell believed to be formerly used as drains.



Wall inlet is missing eyeball fixture. Small holes, purpose unknown, are causing corrosion staining on pool shell.

Mechanical space.

Bathhouse.

Kellis Pool.

6. Opinion of Probable Construction Cost

The following spreadsheet provides the Opinion of Probable Construction Cost to repair the pool. Since the pool was constructed in 1960, it is not recommended to allocate extensive renovation dollars to a pool that has a concrete shell that is 47 years old. Replacing the pool would address the physical obsolescence of the pool as well as the functional obsolescence.

	Item	Item Cost
	Pool Items	
1	Remove paint, repair pool shell cracks, two protruding pipes in deep end, and repair holes in shell, and apply quartz aggregate finish with tiled safety line marking at slope change to deep water with anchors (provide water tightness test)	$75,238
2	Core test pool shell for integrity	$7,500
3	Provide skimmer weirs and replace skimmer baskets	$700
4	Caulk deck joints	$300
5	Provide two main drain sumps with hydrostats and replace piping to mechanical area	$18,000
6	Replace pressure piping from mechanical area to pool and provide required inlets	$37,000
7	Replace skimmer piping	$5,000
8	Repair pool ladders	$1,900
9	Provide battery operated handicap lift	$8,000
10	Replace pool mechanical equipment, pump, motor, filter, flow meter, valves, piping, gauges	$50,000
11	Provide backwash pit	$8,000
12	Replace chemical pumps and provide double wall chlorine tank and spill pans for muriatic acid	$7,000
13	Provide chemical controller with flow cell assembly	$10,000
14	Provide automatic water level controller and remove fill spout	$5,500
15	Provide portable eye wash station	$50
16	Provide shade umbrellas	$24,000
17	Replace chemical room with housing for mechanical area and chemical rooms (includes demolition)	$140,000
18	Replace bathhouse (includes demolition)	$330,000
19	**Site Upgrade**	**$250,000**
20	**Subtotal**	**$978,188**
21	**15% Contingency**	**$146,728**
22	**Total (2007 USD)**	**$1,124,916**

	Additional Consideration Items	Item Cost
1	Confirm required safety equipment and quantity are provided	Staff to provide

The opinion of probable construction costs is based on current 2007 prices.

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I. HILLSIDE POOL

1201 E. Maddox Avenue

1. Hillside Pool Commentary

The Hillside Pool was originally built in 1960. This facility was closed for 5 or 6 years and the bathhouse was demolished prior to its 1994 renovation. In 1994, Hillside Pool received new pool deck, stainless steel gutters, a high rate pressure sand filter, and a new bathhouse that appears to meet ADA (Americans with Disabilities Act) guidelines. The stainless steel gutters are in good condition with jet wash sprays and four overflow weirs. The gutter and main drain are connected to a surge tank adjacent to the deck. The tank was being replaced the day of the site visit. The pool fill line reportedly is connected to the tank but could not be observed.

This site was observed on February 22, 2007 and was not in operation when observed. The volume of the pool is approximately 94,000 gallons, and the perimeter is approximately 204 feet. The surface area of the Paddock high rate sand filter is 23.75 ft^2 and was designed for a filtration rate of 13.8 gpm/ft^2. This filter is backwashed manually. There is one 7.5 hp motor which drives a 1,745 rpm pump. Using the design filtration rate, the flow rate is 328 gpm and a turnover rate of 4.8 hours. This satisfies the current Texas Department of State Health Services standard of a 6 hour turnover. The 2,370 square foot pool has a 125 bather capacity by the current Texas Department of State Health Services standards, which matches the capacity posted at the site. The average daily attendance for this facility was reported to be 49 bathers.

The mechanical equipment resides in a chain link enclosure. The filters, pump, motor, Strantrol System 3 chemical controller, sodium hypochlorite sanitizer, muriatic acid pH buffer, and Meg-O-Matic chlorine and acid feed pumps are all stored in this mechanical space. The exposed piping in the mechanical area was replaced in 2005 with a mix of schedule 40 and schedule 80 PVC pipe. The velocity of the flow through both the suction and pressure PVC pipe is within the current Texas Department of State Health Services standards.

The facility is enclosed by a 6’ chain link barbed wire fence. The concrete deck is 5’5” wide with a larger area in front of the bathhouse. The deck expansion joints are in good condition. The bathhouse is made of cinder block walls with a painted finish and a bare concrete floor. The electrical outlets inside are GFI protected. An emergency phone, hose bib, and piping for a water fountain are all located outside the bathhouse. Two picnic tables are located under a small pavilion. Overhead lighting is not provided for night swimming.

It is unknown if there is any water loss through the pool shell or piping at this facility due to the known water loss caused by the condition of the equalizer tank. However, the piping is much newer than most of the other facilities and the shell has a minimal amount of cracking.

2. Pool and Deck

A. Conditions

- The pool shell shows minimal cracking, but the finish is rough and the paint is peeling.
- There is one main drain, covered with a 12" x 12" anti-vortex drain cover. The velocity of the flow through the drain cover is 1.75 feet per second and is not in compliance with the current Texas Department of State Health Services standard of 1.5 feet per second.
- The main drain does not have a diagonal measurement of 24" as required by TDHS.
- The caulk seal along the bottom of the gutter face is failing.
- This pool is not ADA (Americans with Disabilities Act) accessible. There is an anchor socket for an old mechanical handicap lift, but a lift was not observed at the facility.
- The grout around the mechanical lift anchor socket has broken away, creating a toe stub.
- The pool stairs do not have a contrasting color safety stripe on the edge of the steps.
- The vertical depth markers are in poor condition. Many are torn, missing, or stained.
- There are several areas of chemical staining on the deck, which is evidence that water ponds on the deck instead of draining away from the pool.
- One of the portable lifeguard chairs is missing its wheels.
- Overhead lighting is not provided around the pool deck for night swimming.
- Lifeguard safety equipment was in storage.
- Two pool ladders are provided and anchors for a third ladder. One ladder is missing a rubber cap. The rail for the stair entry is missing an escutcheon plate.
- Except for the small pavilion shade structure there is little shade provided at this facility.

B. Recommendations

- Before any repairs begin, core samples of the pool shell concrete need to be taken and analyzed for strength.
- Remove paint, repair cracks in shell, and perform a water tightness test.
- Due to the rough condition of the surface, a quartz aggregate finish (Diamond Brite) is recommended.
- Provide two main drain sumps and covers.
- Caulk seam between gutter and pool shell.
- Clean chemical staining on pool deck.
- Repair pool ladders and stair rail.
- Provide battery operated handicap lift.
- Remove mechanical lift anchor and repair deck location.
- Provide tiled safety stripe on edge of pool stairs.

- Provide tiled 4” safety line at transition to deep water.
- Replace vertical depth markings.
- Provide wheels for portable lifeguard chair.
- Provide shade umbrellas.
- Staff to confirm all required lifeguard safety items and the necessary number are provided.

3. Mechanical System

A. Conditions

- The original surge tank was removed and a custom-built tank will be installed for the 2007 season. The capacity of the surge tank is estimated to be in the range of 400 to 500 gallons, well below the current Texas Department of State Health Services standard of 2,370 gallons. The tank does not provide the necessary surge capacity.
- The pump strainer shows significant amounts of corrosion. The pump and motor display some corrosion.
- The filter tank displays significant corrosion as well as the filter tank support legs.
- A drain cover is not provided over the sanitary sewer line.
- A backwash tank is not provided.
- An air gap between the backwash line and the sanitary sewer is provided. The air gap size does not meet the current Texas Department of State Health Services standards. (It is reported to be repaired during annual maintenance for 2007 season.)
- The make up water fill line does not meet the current Texas Department of State Health Services standards for required air gap.
- The Strantrol System 3 chemical controller is no longer manufactured.
- The automatic water level controller is not operational.
- The backwash line is not aligned with the sewer drain, which causes flooding of the mechanical area during backwashing. (It is reported to be repaired during annual maintenance for 2007 season.)
- Liquid chlorine is stored in a single walled container. Secondary containment for the chlorine is not provided.
- Metal components in the mechanical area display corrosion. This condition is compounded by the flooding of the backwash water.
- An eye wash station is not provided in the mechanical area.
- The chemical feed pumps are connected to the chemical controller via an extension cord run through conduit.

B. Recommendations

- Replace surge tank.
- Replace pool mechanical system.
- Provide the current Texas Department of State Health Services required air gap at backwash and fill piping. (It is reported to be repaired during annual maintenance for 2007 season.)

- Provide backwash tank.
- Replace automatic water level controller.
- Replace existing mechanical area with a structure housing the mechanical equipment and separate dedicated chemical rooms for chlorine and acid.
- Replace chemical pumps.
- Provide chemical controller and flow cell assembly.
- Provide double walled chlorine tank.
- Provide spill platform for the muriatic acid containers.
- Provide portable eye wash station.

4. Bathhouse

A. Conditions

- The air vents around the bottom perimeter of the changing area and restroom walls do not provide privacy from outside the bathhouse.
- There are two hose bibs outside of the bath house, only one is equipped with backflow prevention. (It is reported to be repaired during annual maintenance for 2007 season.)
- The bathhouse does not meet the current Texas Department of State Health Services standards.

Restroom Fixtures	Provided	Required (125 Capacity)
Male		
Water Closets	1	2
Urinals	1	2
Lavatories	1	2
Showers	3	2
Baby Changing Table	0	1
Female		
Water Closets	2	3
Lavatories	1	2
Showers	3	2
Baby Changing Table	0	1

B. Recommendations

- Replace bathhouse.

5. Facility Photographs

Equalizer tank replacement in progress

Overflow weir, failing caulk seal along gutter, poor condition of vertical depth markers

Rough condition of pool shell

Misalignment of backwash line and sanitary sewer drain causes mechanical area to flood.

Severe corrosion of filter tank legs.

Mechanical space.

Severe corrosion on filter tank

Bathhouse.

Hillside Pool.

6. Opinion of Probable Construction Cost

The following spreadsheet provides the Opinion of Probable Construction Cost to repair the pool. Since the pool was constructed in 1960, it is not recommended to allocate extensive renovation dollars to a pool that has a concrete shell that is 47 years old. Replacing the pool would address the physical obsolescence of the pool as well as the functional obsolescence.

	Item	Item Cost
	Pool Items	
1	Remove paint, repair pool shell cracks, and apply quartz aggregate finish with tiled safety line marking at slope change to deep water and tile safety stripe on edge of stairs (provide water tightness test), caulk seam between gutter and pool shell	$60,542
2	Core test pool shell for integrity	$7,500
3	Provide two main drain sumps with hydrostats and replace piping to mechanical area	$18,000
4	Repair pool ladders and stair rail	$300
5	Provide battery operated handicap lift	$8,000
6	Replace vertical depth markings	$245
7	Remove mechanical lift anchor and repair deck location	$250
8	Replace pool mechanical equipment, pump, motor, filter, flow meter, valves, piping, gauges	$50,000
9	Provide backwash pit	$8,000
10	Replace surge tank	$20,000
11	Replace chemical pumps and provide double wall chlorine tank and spill pans for muriatic acid	$7,000
12	Provide chemical controller with flow cell assembly	$10,000
13	Replace automatic water level controller	$5,000
14	Provide portable eye wash station	$50
15	Provide shade umbrellas	$18,000
16	Replace chemical room with housing for mechanical area and chemical rooms (includes demolition)	$140,000
17	Replace bathhouse (includes demolition)	$330,000
18	**Site Upgrade**	**$250,000**
19	**Subtotal**	**$932,886**
20	**15% Contingency**	**$139,933**
21	**Total (2007 USD)**	**$1,072,819**

	Additional Consideration Items	Item Cost
1	Clean pool deck staining	Staff to provide
2	Confirm required safety equipment and quantity are provided	Staff to provide
3	Repair lifeguard chairs	Staff to provide

The opinion of probable construction costs is based on current 2007 prices.

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