Martin Luther King Jr. Park Pool

Swimming Pool Feasibility Study

Yakima, WA

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AQUATICS FOR LIFE

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EXECUTIVE SUMMARY

Aquatic facilities contain complex equipment, amenities, and support spaces that require intensive planning and extreme quality control measures. Balancing numbers in aquatic operations entails several different areas, including basic budgeting, an equipment maintenance plan, as well as staying ahead of the curve when it comes to the latest trends in aquatics for a new facility or renovating an existing one. Aquatic operators who spend time analyzing and planning these three areas to manage and achieve daily results will set the tone for their organization's future success and financial sustainability.

In 2019, Counsilman-Hunsaker was retained by the City of Yakima to develop conceptual options and scenarios being considered by the City for Martin Luther King Jr. Park. The scope of this Outdoor Aquatic Facility Feasibility Study is to identify the aquatic needs for the City of Yakima and to present potential facility spaces that can meet those needs. This study is based on extensive research through the following processes:

Needs Assessment

- Common vocabulary, vision
- Evaluate existing area providers
- Research area demographics
- Identify potential user groups

Facility Program and Space Requirements

- Develop schematic design options for programming
- Develop project cost estimates
- Identify potential partnerships
- Site requirements

Financial Performance

- Estimate revenue potential
- Estimate operating expenses
- Determine cash flow
- Sources of funding

Needs Assessment

The following are key take-aways from the community meetings:

- Liked lots of recreational components and activities
- Would like to see some teen features
- Would like to see a sprayground

Program Requirements

Three options were developed by the consultant to meet the aquatic needs of the City of Yakima. The concepts were ordered from smaller, to larger with differing amenities and slide packages. Options 2 and 3 were also shown with phasing options in the event funding was not available for the entire cost.

Option 1

Indoor features

- Lobby
- Offices
- Locker rooms
- Outdoor restrooms
- Classroom/party room
- Concessions
- Storage

Aquatic Elements

- 2,763 sq. ft. recreation pool
  - 4 - 25 Yard Lap Lanes
  - Crossing activity
  - Waterslide
- 3,739 sq. ft. tot pool
  - Tot slide
  - Play structure
- 1,235 sq. ft. sprayground

Cost: $7.4 M

Option 2

Indoor features

- Lobby
- Offices
- Locker Rooms
- Outdoor Restrooms
- Classroom/party room
- Concessions
- Storage

Aquatic Elements

- 5,167 sq. ft. recreation pool
  - 4 - 25 Yard Lap Lanes
  - Crossing activity
  - Vortex
  - Water slides
  - Large bowl slide
- 2,139 sq. ft. tot pool
  - Family slide
  - Play structure

- 1,235 sq. ft. sprayground

Cost: $10.4 M
Phase 1: $9.4 M

Option 3

Indoor features
- Lobby
- Offices
- Locker Rooms
- Outdoor Restrooms
- Classroom/party room
- Concessions
- Storage

Aquatic Elements
- 5,642 sq. ft. recreation pool
  - 3 - 25 Yard Lap Lanes
  - Crossing activity
  - Vortex
  - Water slides
  - Lounge area
- 873 Sq. Ft. Teen Pool
  - Bowl slide
  - Rope swing

2,139 sq. ft. tot pool
family slide
Play structure
1,235 sq. ft. sprayground

Cost: $11.3 M
Phase 1: $9.8 M

Financial Performance

The following chart provides a "recapture rate" to define the percentage of operating expenses recuperated or recaptured by operating revenue for Option 1, Option 2, and Option 3.

Operational Summary					
	2019	2020	2021	2022	2023
Option 1					
Project Cost	$7,390,000				
Attendance	36,962				
Revenue	$143,817	$150,008	$158,052	$163,518	$170,999
Expense	$279,924	$287,251	$294,942	$302,440	$310,376
Operating Cashflow	($136,107)	($137,243)	($136,890)	($138,922)	($139,377)
Recapture Rate	**51%**	**52%**	**54%**	**54%**	**55%**
Capital Replacement Fund	$37,000	$37,000	$37,000	$37,000	$37,000
Cash Flow	($173,107)	($174,243)	($173,890)	($175,922)	($176,377)
Option 2					
Project Cost	$10,350,000				
Attendance	44,354				
Revenue	$224,196	$233,554	$245,501	$253,889	$265,114
Expense	$326,742	$335,344	$344,377	$353,146	$362,455
Operating Cashflow	($102,546)	($101,790)	($98,876)	($99,257)	($97,341)
Recapture Rate	**69%**	**70%**	**71%**	**72%**	**73%**
Capital Replacement Fund	$51,800	$51,800	$51,800	$51,800	$51,800
Cash Flow	($154,346)	($153,590)	($150,676)	($151,057)	($149,141)
Option 3					
Project Cost	$11,230,000				
Attendance	51,746				
Revenue	$263,379	$274,478	$288,726	$298,628	$311,972
Expense	$383,305	$393,343	$403,874	$414,135	$425,002
Operating Cashflow	($119,926)	($118,865)	($115,148)	($115,508)	($113,030)
Recapture Rate	**69%**	**70%**	**71%**	**72%**	**73%**
Capital Replacement Fund	$56,200	$56,200	$56,200	$56,200	$56,200
Cash Flow	($176,126)	($175,065)	($171,348)	($171,708)	($169,230)

INTRODUCTION

In 2019, Counsilman-Hunsaker was retained by the City of Yakima to develop conceptual options and scenarios being considered by the City for Martin Luther King Jr. Park. The scope of this Outdoor Aquatic Facility Feasibility Study is to identify the aquatic needs for the City of Yakima and to present potential facility spaces that can meet those needs. This study is based on extensive research through the following processes:

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Future Programming

The following aquatic programs have been identified as necessary for the City of Yakima's future aquatics.

- Swim Lessons
- Water Fitness
- Lifeguard Certifications
- Birthday Parties/Private Rentals
- Recreational Swimming

AQUATIC TRENDS

When developing tomorrow's vision for aquatic programming, it is important to understand traditional uses and trends in aquatic programs. Trends evolve in the aquatic industry as swimming expectations evolve. While national surveys continually rank swimming as a favorite recreational sport, today's aquatic centers incorporate recreation swimming and wellness pools to augment revenue of competitive swimming, thereby creating multi-generational facilities through shared expenses.

Contemporary aquatic centers are fully ADA accessible, allowing everyone to benefit from aquatic activities. Compliance with the 2010 Standards for Accessible Design specifically states that all pools larger than 300 linear feet of pool wall perimeter need at least two accessible means of entry, one of which needs to be either a pool lift or a sloped entry. The secondary means of entry can be either a lift or sloped entry, or pool access stairs, transfer system, or transfer wall. Pools with less than 300 linear feet of pool wall perimeter need one accessible means of entry, either a pool lift or sloped entry. Spas need one entry, which can be either a pool lift, transfer system or a transfer wall. As more athletes cross train with water fitness components and more doctors recommend water rehabilitation for injured, overweight diabetic, and aging patients, multi-generational aquatic centers are inclusive of the entire community.

The following describes national trends for four aquatic user groups: lessons and fitness, water wellness, recreation, and competitive swimmers. The descriptions make evident the very different requirements for each of these aquatic user groups when planning and designing an aquatic facility.

Lessons and Fitness Enthusiasts

Swim Lessons

According to the Centers for Disease Control, more than one in five people who die from drowning are children age 14 and younger. For every child who dies from drowning, another four receive emergency care for nonfatal submersion injuries, which can cause brain damage that may result in long-term disabilities, including memory problems, learning disabilities, and permanent loss of basic functioning.[1]

Drowning Prevention is essential for children and adults, whether living in areas with natural bodies of water or simply being invited to pool parties. With more than one available pool in an aquatic center, lessons can be maximized so that a large number of residents can be taught to swim. Ideally, water depth for instruction should accommodate young participants to stand comfortably in the water. Recreation pools easily provide this preference. Deeper competition pools offer moveable floors or other means of altering water depth for instructional purposes.

A well-run water lesson program is essential in introducing young swimmers to safe aquatic skills that can be used throughout their lives. By offering the community a comfortable, controlled aquatic environment, swimming and diving lessons can become an enjoyable learning 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 watercraft instruction to learn to swim, water safety is an integral part of any community. 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 to national-level competition.

Entrapments

Aware of 74 cases of body entrapments, including 13 confirmed deaths between January 1990 and August 2004, the U.S. Consumer Product Safety Commission reported the deaths were the result of drowning after the body or limb was held against the drain by the suction of the circulation pump. The incidents occurred in both residential and public settings.[2] Subsequently, a new federal pool and spa safety law was signed by former President George W. Bush on December 19, 2007. The Virginia Graeme Baker Pool and Spa Safety Act requires all public pools and spas to have safety drain covers, and in certain circumstances, an anti-entrapment system.[3] The goal of the law is to improve the safety of all pools and spas by increasing the use of layers of protection and promoting uninterrupted supervision to prevent child entrapments and drownings.

When teaching outside standard lesson, some classes mimic the natural environment through instructor creativity (i.e., 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 memorized skills with an instructor present.

Lifeguarding and CPR

Water rescue skills and CPR are typically taught to all lifeguards. However, water rescue and CPR skill education is integral to the community because families are the true lifeguards of one another whether at the beach or a backyard pool. Often, such courses are sponsored by the Red Cross, Ellis and Associates, and other providers of safety training.

School District Lesson Users

School districts are often valuable contributors to help efficiently program aquatic facilities. 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 area children to learn to swim. Aquatic sports (diving, water polo, synchronized swimming, underwater hockey, etc.) can contribute to the overall use of the facility as well as 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 more often the pool can be utilized for group activities for participants and spectators, the more likely the aquatic facility will be "alive" day in and day out. The types of activities that tend to draw a crowd are participatory, measurable, exciting, and often challenging – but not always so challenging that only the elite can participate. Activities can be tailored to different ages, sizes, and/or skill levels.

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 to use aqua

aerobics for their entire fitness program. Additionally, businesses might sponsor or subsidize aquatic fitness as part of their employee wellness training discipline.

Aquatic fitness also remains one of the most popular forms of exercise among senior adults. Data taken from the National Center for Health Statistics shows lifetime expectancy is up 30 years since 1900.[4] The older adult market spans four generations from the Progressive Era 1900-1928, Depression Era 1929-1939, WWII Era 1940-1945, and Baby Boomers 1946-1964. The older adult market can be a large, affluent market willing to participate in water fitness, wellness programming, and other recreation opportunities. This diverse age group from 55 to 90+ includes sub-groups of which some are still working, some have children in college, and some are focusing on retirement, grandkids, and wellness. Consequently, seniors can be willing, enthusiastic participants if certain requirements are met. They typically feel uncomfortable in an environment with teens and generally respond better to strictly defined programming of well-structured activities such as water aerobics, arthritis water exercise, water walking, physical therapy, adult swim lessons, 'Save a Life' workshops, lap swimming, and Masters swimming.

Aquatic Exercise Trends

AquaBata Shallow

Take advantage of the latest trend in fitness to deliver the next level of training to your aquatic programs. High Intensity Interval Training (HIIT), including the specialized Tabata format, transitions into the water with high-powered results. Minimal choreography, maximal results – AquaBata training is the hottest workout in the pool that attracts a younger market, including men! AquaBata….for an Aqua Body!

Aquatic Cardio Programs

Discover the key concepts necessary to create safe, effective and enjoyable shallow water aerobic programs. Creative sequencing, smooth transitions and movement variations will help leaders to develop a unique style of choreography or movement progression. All aquatic professionals can benefit from this hands-on application of the physical properties of water in various cardio class formats.

Aquatic Circuit Applications 2

Circuit training can open your pool to a wide array of training options that are time efficient and fun. Part 2 of this popular workshop offers all new ideas for creative circuit training in shallow water, along with suggestions for deep-water formats. Explore instructor-guided and self-guided methods to provide optimum results for your pool, your participants and your teaching personality. Innovative ideas fuse cardio and resistance training to help participants achieve fitness goals.

Aquatic Interval Applications

Create dynamic interval formats for the pool that can be adjusted for various ages and abilities through Work: Recovery ratios, movement tempos, exercise choices and impact options. This interactive workshop will assist you in developing motivating aquatic interval programs to enhance training results for participants and allow you to lead the workout safely & effectively from the pool deck.

Aquatic Kick Boxing

Explore innovative, safe and effective aquatic Kick Boxing! This program is great for group fitness instructors, small group fitness leaders, trainers and coaches! This interactive non-stop format includes movement modifications and adaptations for the pool. Learn basics and beyond to successfully build techniques into programs for all ages and fitness levels. Explore the benefits of three modalities; stand-alone training, combination programming and multi-sport fitness workout options.

Boot Camp Deep

Take your boot camp to the deep and experience suspended training with a high intensity, non-choreographed workout. Learn how to employ a variety of body positions (vertical, horizontal and diagonal), as well as specific training drills that utilize the pool wall. Command attention in your deep-water classes with challenging formats geared for advanced training. Lower intensity modifications will be discussed.

Boot Camp Shallow

Ten-hut! Push participants past training plateaus with a platoon of shallow water training designed to target fitness components of agility, balance, coordination and speed in addition to cardio capacity. This no-nonsense workout formula delivers high-intensity training options, with and without equipment, to maximize results. Training tactics may not be suitable for beginning exercisers, persons with special needs or those unwilling to get their hair wet.

Core Training + Stretch Techniques

Dive into a pool of core training techniques that include standing, traveling and buoyant options to develop dynamic strength for improved function. Learn options with, and without, equipment to meet a variety of goals and successfully target all skill levels. Flow into a sampler of stretching techniques – static, dynamic and equipment assisted options. From relaxing mind-body options for warm waters to fluid movements for cool pools, learn how to remain flexible in all environments!

Deeper Applications 2

Dive deeper into aquatic programming applications by taking advantage of current trends in fitness. Deeper Applications 2 offers updated information and creative new fitness formats to promote continued progression in your deep-water classes and personal training sessions. Experience suspended high intensity interval training (HIIT) concepts, including the Tabata protocol, which effectively target the cardio system while challenging the core.

H2O Body Sculpting & Resistance Training

Add resistance, through the use of equipment and body positions, to create a shallow-water fitness program that targets muscular strength & endurance, range of motion and balance skills. Learn how to effectively integrate both impacting and grounded techniques to accommodate various fitness levels, as well as different pool considerations, such as water depth and temperature! This high-powered workout explores another level of training with controlled resistance.

Next Level Noodle

Take your aquatic class to the next level with creative cardio, targeted toning, and core concepts…all with the pool noodle. Explore all impact levels (grounded, propulsion & levels I, II, III) and modifications for all ability levels in this fun- focused, total body conditioning class.

PiYoChi Cardio Intervals

A motivating interval format integrates Pilates & Yoga techniques with cardio training to create mind-body programming suitable for cooler water temperatures (83-86 F). Pilates' concepts target the "powerhouse" muscles of the core; Yoga focuses on alignment, awareness and breath control; cardio components burn calories and keep the participant warm. Expand group exercise and personal training options with this functional fusion of training principles for the pool!

Rated M for Mature

This Aquatic Aerobic & Resistance Program (AARP) is fun, targets function, and provides fundamental exercises for the mature market. Baby Boomers and beyond want a training program that meets their needs and interests, while accommodating special concerns, such as fear of falling. Develop purposeful movement to achieve balance, coordination, mental awareness, posture, and range of motion needed for active lifestyles, as well as independent living.

Successful Senior Strategies

Aquatic programming that targets the senior population spells success! From marketing and promotion to music and motivation, every concept of program design, development and implementation must be considered. Explore this creative collection of pool programs that are perfect for the older adult market: Circuits with Class; Interval Integration; Water Walk 101; Strong, Stretched & Senior. Take home four complete programs and ideas for getting started…successfully!

Upper Body, Core & More

Heat up your shallow water classes with an array of upper body and core training applications. Learn how to apply fun, force and function to basic arm patterns building progressions for all goals and abilities. Next, explore how to integrate unilateral and bilateral upper body moves and impact variations for core training benefits. Finally, put it all together with and without equipment for endless combinations.

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

- ***Finning*:** This active swimming program requires training fins or flippers and utilizes fitness lap lanes of a pool. The kicking and pulling enhances conditioning and toning.
- ***Scuba and Snorkeling*:** These lessons are growing in popularity (possibly due to the increase of environmental professions) and typically start in swimming pools.
- ***Scuba Rangers*:** Scuba and snorkeling skills are taught to kids 8 to 12 while using underwater flashlights, navigation compasses, and underwater photography.
- ***Underwater Hockey*:** According to USOA Underwater Hockey, "The pool should be 25-meters by 15-meters and two-meters deep all the way across, but anything will do, even slopes (just change ends at half-time). Lead weights and three meters of rope can be used as goals, though the sound of the puck thunking into the back of a metal goal is very satisfying and should be experienced."
- ***Water Polo:*** Dimensions of a water polo pool are not fixed and can vary between 20 by 10 and 30 by 20 meters. Minimum water depth must be at least six feet. The goals are three meters wide and 90 centimeters high.
- ***Kayak Polo:*** This sport involves water polo being played from kayaks. According to Carolina Kayak Polo, "It is difficult to describe the passion and excitement that is created when a kayak water polo game is in progress. The participants—speeding the length of the pool weaving through the opponent's lines of defense and spinning in their kayaks to receive a pass—create a fast and thrilling event."
- ***Water Basketball:*** Ideated in 1986 by Italian teacher, Francesco Rizzuto, this sport is a mixture of basketball and water polo. When designing a pool, full court water basketball is more challenging when tile lines are encrypted into the floor of the pool.
- ***Water Volleyball:*** Portable and floatable aqua water volleyball sets come complete with two net positions, two anchor bags, and a staked floating perimeter boundary.

- ***Triathlons*:** These athletic competitions, which the contestants compete in three different events to find the best all-around athlete, typically consist of swimming, cycling, and running.
- ***Kayak and Canoe Clubs*:** Due to the popularity of Extreme Sports, kayak and canoe clubs are growing in popularity and use large pools for training.

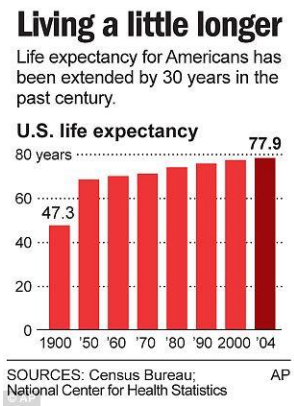
Swim lessons, lap swimming, water jogging, deep-water aerobics, lifesaving instruction, diving lessons, survival swimming, synchronized swimming, water polo, underwater hockey, and scuba instruction can take place in a competitive/lesson/training pool, which frees up the recreation pool for swimmers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

Aquatic Physical Therapy

Aquatic therapy is rehabilitation performed in warm water and involves physical activity of exercise and motion in the presence of a licensed aquatic physical therapist. 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 aquatic therapy program offers improvement in:

- Overall health and fitness
- Stretching capacity
- Range of motion
- Movement capabilities
- Coordination
- Physical stamina and endurance
- Swimming skills, safety, and abilities

Though many people who use aquatic therapy are enthusiasts of meditation or massage, some are looking for rehabilitating or improving a certain level of health. The Aquatic Exercise Association certifies instructors to teach Arthritis Foundation Arthritis Programs. Many participants in these programs report reduced arthritis symptoms, including increased mobility and decreased pain and stiffness.[5] New studies by the Aquatic Exercise Association suggest that the management of bone density can be facilitated by water exercise.[6] When moderate exercise is recommended for obese patients, the low-gravity qualities of aquatic therapy can be very appealing to this user group. Over the past several years, water exercise programs have multiplied in health clubs, pain clinics, and hospitals. Users include:



- ***Injured Athletes*:** Athletic trainers and sports medicine physicians are prescribing aquatic therapy as a rehabilitative/preventive fitness program.
- ***Post-Operative Patients and the Disabled*:** Includes patients with physical ramifications such as spinal dysfunctions, post-operative muscle toning, injuries, and arthritis.
- ***Arthritis Sufferers*:** The Arthritis Foundation certifies instructors to teach arthritis exercises such as Rusty Hinges and Joint Effort.

- ***Aging Baby Boomers*:** Some 70 million strong, "boomers" invented the fitness movement and show no sign of abandoning it as they age, especially in warm water pools.
- ***Obese Patients*:** More doctors are prescribing aquatic physical therapy for overweight issues.
- ***Pregnant Women*:** Effects of the low resistance of water exercise is soothing to this user group.
- ***Meditation Enthusiasts*:** Fans of mind and body movements enjoy immersing in warm water pools to complete the tranquil state of meditation.

Key Components of Aquatic Therapy Centers

Aquatic physical therapy centers are growing in necessity for rejuvenation and social wellness for rehabilitation needs and developmental disorders. Colorful environments and interactive water is a stimulating, effective, and cathartic treatment, while specific design elements are ultimately inspired by the rehabilitative needs of patients. Key components include:

- Warm pool water capability with fast pool turnovers.
- High-quality water chemical treatment systems, including dual sanitization methods and an appropriately designed HVAC/DH system.
- Easy access from the parking lot to the locker rooms, pool deck, and into the pool.
- Ample space in locker rooms and wider pool deck for wheelchairs, walkers, dry and wet equipment, and dry-side therapy.
- In-water amenities such as perimeter railings, aerobic steppers, treadmills, underwater benches, and ramps.
- Flexible pool depths for multiple programmatic needs.
- Aesthetically pleasing and light-filled private spaces.

Recreation Swimmers

Successful aquatic centers combine creative water play areas for various age groups in a safe, friendly atmosphere. While aquatic recreation has become much more age-defined, attractions have age limitations and appropriateness due to elements of thrill and capabilities. 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 enjoy romping in zero-depth recreation pools, making their adventurous way across lily pad walks, and climbing on participatory play features with "just-their-size" waterslides. Older children speed down flume and drop slides and enjoy larger water play structures. Teens enjoy gathering spots like action islands with access to deep water pools and more adventurous waterslides. Lazy rivers and current channels cater to most demographics while spas and lap lanes are geared towards adults.

Recreational Aquatic National Trends by Age Group	
Age Group	Recreational Aquatic Age-Group National Trends
Age 0-3	Tot pool, tot slides, gentle spray features
Age 4-7	Water sprayground, zero-depth 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, lazy river, gathering places, sand volleyball, mat racer, diving boards
Age 17-22	Action island, intense waterslides, flow rider, mat racer, climbing wall, open water, sand volleyball, drop slides, diving boards
Age 23-45	Zero-depth pool (to be w/children), open water, spa, sun deck, lap lanes, lazy river, waterslides, diving boards
Age 46+	Spa, sun deck, lap lanes, lazy river, family-friendly waterslides
Source: Counsilman-Hunsaker	

Recreation Pool Features

Leisure Pool

The free-form leisure pool provides an inviting atmosphere with plenty of shallow water from zero-depth 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.

Participatory Play Feature

Located within the leisure pool, 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.

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 miles per hour. The channel is very popular as a water walking setting for fitness classes or adults seeking non-programmed exercise, walking with or against the current.

Water Vortex

An interesting area within a leisure pool is a vortex where water jets propel water in a circular motion. 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.

Waterslides

The thrill of mounting the stairs to the exhilaration of sliding down into the water makes waterslides a desired attraction. While some slides are straight with a steep or gentle gradient, others wind down with sharp enclosed curves or high walls on the outside of the curves. Slides can be a long tube or alternate between an open chute and closed tube. Experiences can range from family-friendly to surprisingly intense.

Drop Slide

A drop slide offers the thrill of walking up the steps of the waterslide, hearing the excitement and splash of water sliders ahead, then sliding down to the water with the bonus of dropping into the pool upon exit in a short freefall.

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.

Climbing Wall

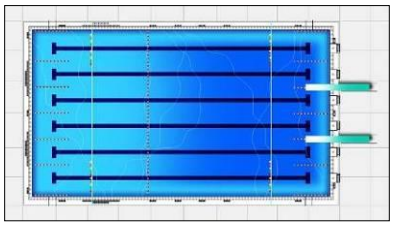
A kids' climbing wall offers the experience, physical activity, and challenge of climbing with the water underneath to cushion the fall.

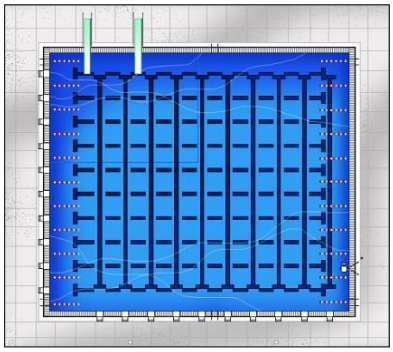
Additional Support Amenities

Community pools have bathhouses that provide lockers/ showers/changing/restrooms for their guests. Snack / concession areas provide food for hungry appetites, thus offering a day-long experience. Birthday party rooms can increase revenue by offering swim parties with games and food.

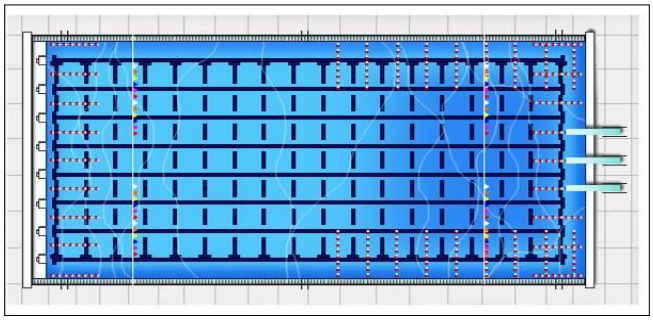
Competitive User Groups

A competition pool must be 25 yards or 25 meters for short-course events and 50 meters for long-course events. USA Swimming and FINA sanction short-course 25-meter as well as long-course 50-meter competitions. Depending on the level of competition, a minimum of six lanes is required, but eight lanes are expected to better allow for larger heats. While almost all 50-meter pools have ten lanes, 1 and 10 serve as buffer lanes. National caliber water polo matches take place in 30-meter fields of play minimum with at least a 2-meter zone behind each goal line. High schools, USA Swimming, the YMCA, and NCAA conduct short-course 25-yard competitions. For high school and NCAA events, a pool must have a minimum of six lanes, each at least seven feet wide. Several current standards require six feet or more of water depth beneath starting blocks. While some shallow water is acceptable, water depths of two meters or more "is required" as per applicable rules.





High school and college water polo often use 25-yard and 25-meter pools, but all high-level meets for USA Water Polo and international events are held in 50-meter pools. Water depth of two meters or more "is required" as per applicable rules. Synchronized swimming requires a deep, 12-by-25-meter pool area. A minimum water depth of 2.5 meters "is required" as per applicable rules. National and international events are generally conducted in 50-meter pools.



Today, nine governing bodies sanction meets and matches in their respective sports, including:

1. USA Swimming
2. National Federation of State High School Associations (NFSHSA)
3. National Collegiate Athletic Association (NCAA)
4. Federation International de Natation Amateur (FINA)
5. USA Water Polo
6. USA Diving
7. USA Synchronized Swimming
8. USA Masters Swimming
9. YMCA

Diving

Many pool operators have decided to remove diving boards for fear of injury to patrons. However, with proper water depth and supervision, springboard diving is one of the safest sports in existence. No catastrophic diving injuries, recreational or competitive, have occurred in pools sanctioned by any of the main governing bodies in competitive diving. Diving is an integral aspect of many aquatics programs, being found in swimming lessons, recreational swimming, competitive swimming, and of course, competitive diving. Diving is a very important skill to learn as a headfirst entry into water always poses a safety risk, especially into shallow water. However, racing starts and recreational diving can be safely performed, provided that basic precautions are taken.

Springboard Diving

- Water depth must be adequate under, in front of, and to the sides of the board. The Y-USA guideline is to provide at least 11 feet of water depth for a one-meter board.
- A trained coach should be present for practice and competition, in addition to the lifeguards.
- When the diving facilities are in use, a lifeguard should be specifically stationed in that area to manage the activity and to enforce the following rules:
    - Only one diver is allowed on the board at a time.
    - Only one bounce is allowed at the end of the board.
    - Dive or jump directly ahead.
    - Exit immediately at the nearest ladder after each entry.
    - The hands must enter the water first on all headfirst dives.

Racing Dives/Starting Blocks

- Most authorities, Y-USA included, now require five feet of water depth for starting block usage.
- Non-springboard diving instruction, whether teaching competitive dives to new swimmers or teaching new diving techniques to experienced swimmers, should be performed in no less than nine feet of water.
- Starting blocks should be used only with the direct supervision of a trained coach.
- Starting blocks should be clearly marked as closed when not in use. A cone or cover is suggested on each block to keep untrained or unsupervised users off the block.

Open Swim General Rules

- Diving from the pool deck should not be permitted in less than nine feet of water.
- "No Diving" signs as well as depth markers should be placed conspicuously at the water's edge and at other locations in the facility. Lifeguards must strictly enforce this rule.
- Inform new users and outside groups of the diving rules before they enter the water.

High School Users

High school varsity swimming is typically well supported in most communities across the U.S.; however, many schools lack the ideal facility for training and competition. Because quality pool time is usually scarce in most areas, renting pool time from other area facilities can be daunting due to various needs and agendas, thus pool availability can diminish as facilities experience capacity.

High school competitive swimming requirements include:

- Course length of 25 yards with a minimum width of 45 feet for six 7-foot-wide lanes or 60 feet for eight 7-foot-wide lanes
- 125 spectator seats
- Pace clocks, stretch cords, mats (for sit-ups, etc.), free weights, medicine balls, weight training equipment, kickboards, fins, paddles, pull buoys, and goggles

USA Swimming

USA Swimming formulates rules, implements policies and procedures, sanctions national championships, disseminates safety and sports medicine information, and selects athletes to represent the United States in international competitions. USA Swimming has 337,084 year-round members nationwide and sanctions more than 7,000 events each year. USA Swimming has organized regional and national competitions for age group competitive swimming in the United States. The base for popularity is primarily a young age group that begins around age eight and peaks at age 11 as shown in the chart below.

2015 Year-round Athlete Membership										
Age	New Female	Renew Female	Total Female	% of Total Ath	New Male	Renew Male	Total Male	% of Total Ath	Grand Total	% of Total Ath
8 & Under	11,663	5,760	17,423	5.2%	9,050	4,281	13,331	4.0%	30,754	9.2%
9	7,687	8,052	15,739	4.7%	5,728	5,868	11,596	3.4%	27,335	8.1%
10	7,848	12,336	20,184	6.0%	5,764	8,868	14,632	4.3%	34,816	10.3%
11	4,365	16,147	23,512	7.0%	5,352	11,297	16,649	4.9%	40,161	11.9%
12	5,937	17,857	23,794	7.1%	4,563	12,506	17,069	5.1%	40,863	12.2%
13	4,219	17,778	21,997	6.5%	3,375	11,907	15,282	4.5%	37,279	11.0%
14	2,903	16,274	19,177	5.7%	2,585	11,810	14,395	4.3%	33,572	10.0%
15	1,779	13,535	15,314	4.5%	1,826	10,356	12,182	3.6%	27,496	8.1%
16	1,165	10,761	11,926	3.5%	1,251	8,564	9,815	2.9%	21,741	6.4%
17	709	8,646	9,355	2.8%	924	7,611	8,535	2.5%	17,890	5.3%
18	327	6,174	6,501	1.9%	544	6,218	6,762	2.0%	13,263	3.9%
19 & Over	362	5,029	5,391	1.6%	460	6,063	6,523	1.9%	11,914	3.5%
TOTAL	51,964	138,349	190,313	56.5%	41,422	105,349	146,711	43.4%	337,084	
Source: Counsilman-Hunsaker										

Zones

USA Swimming has four zones subdivided into fourteen regions. The four zones are Eastern, Southern, Central, and Western.

There shall be at least two (2) Spring and one (1) Summer Sectional meets in each Zone.

A. Summer Sectional

1. The Summer Sectional shall be a Long Course meet.

2. The Summer Sectional meet shall be no more than four (4) days long, and shall conclude between eight (8) and twenty-two (22) days prior to the U.S. Open or Junior Nationals, whichever comes first.

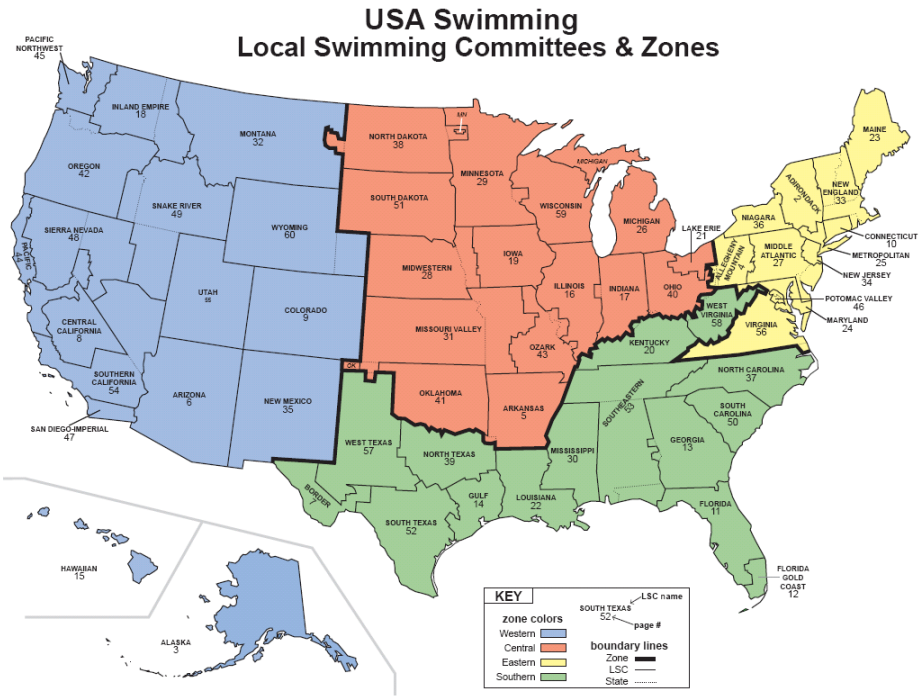
3. The Summer Sectional meet shall have at least one 18-and-under final heat per individual event.

B. Spring Sectional

1. The Spring Sectional meet should be no more than 3 ½ days long. The dates may vary according to the needs of each Zone.

2. The Spring Sectional meet shall have at least one 18-and-under final heat per individual event.

There shall be not more than sixteen (16) Spring and sixteen (16) Summer meets. Sectional Championship dates and sites shall be selected by the Sections and approved by the respective Zone Directors.



Competitive Events Overview

USA Swimming Competitive Events / Requirements

The following chart details the types of competitive swimming events with an approximate number of swimmers, pool requirements for competition and warm-up space, as well as the spectator seating requirements.

Event Title	Number of Swimmers	Pool Requirement	Warm-up Pool Requirement	Spectator Requirements	Number of Days	Time of Year
US Olympic Trials	1,200	One eight-lane, 50-meter pool; minimum depth of two meters and 9-ft wide lanes	Eight-lane, 50-meter pool; minimum depth of two meters and 9-foot wide lanes	14,000	Eight days	Held in Olympic years
US Open	1,000	Two eight-lane, 25-yard competition pools; minimum depth of two meters and 9-foot wide lanes	Eight-lane, 25-yard pool	1,500	Four days	Begins the Wednesday after Thanksgiving
Speedo Winter Junior Championships (East/West)	1,000	Two eight-lane, 25-yard competition pools; minimum depth of two meters and 9-foot wide lanes	Eight-lane, 25-yard pool	1,500	Two separate four-day events	Begins second Wednesday after Thanksgiving
Phillips 66 National Championships	1,000	One eight-lane, 50-meter pool; minimum depth of two meters and 9-foot wide lanes	Eight-lane, 25-yard pool	1,500	Five days	Early August
Speedo Junior National Championships	1,000	One eight-lane, 50-meter pool; minimum depth of two meters and 9-foot wide lanes	Eight-lane, 25-yard pool	1,500	Five days	Early August
USA Swimming Futures Championships	1,000	One eight-lane, 50-meter pool; minimum depth of two meters and 9-foot wide lanes	Eight-lane, 25-yard pool	1,500	Four separate four-day events	Early August
Open Water National Championships	5K – 100 to 150 10K – 75 to 100	Open water area appropriate for the contested distance	None	None	Three days	Summer
TYR Pro Swim Series	700	One eight-lane, 50-meter pool; minimum depth of two meters and 9-foot wide lanes	Eight-lane, 25-yard pool	1,500	Series of four-day events held throughout country	
Speedo Sectionals	800	One eight-lane competition pool; 25-yards, 25-meters or 50-meters acceptable	Required	1,000	Series of three- or four-day events held throughout country	
USA Swimming Zone Championships	800	One eight-lane competition pool; 25-yards, 25-meters or 50-meters acceptable	Required	1,000	Series of three- or four-day events held in each of four zones in the country	

United States Masters Swimming

United States Masters Swimming (USMS) programs are open to all adult swimmers (fitness, triathlete, competitive, non-competitive) dedicated to improving their fitness through swimming. Founded in 1970, the non-profit corporation is organized with 450 clubs throughout the United States. Membership consists of almost 65,000 swimmers ranging in age from 18 to over 100. Within the clubs, structured workouts offer training assistance for specific goals for a healthy lifestyle through camaraderie. Pool and open water races provide opportunities to compete and measure individual progress at the local, state, national, and international levels. USMS programs also offer stroke and technique clinics, workshops, instruction, and social functions. Competitions are organized by age groups of five-year increments (18-24, 25-29, 30-34, 35-39, etc. to 95 and over). Events include 50, 100, 200, 500, 1000 and 1650 freestyle (400, 800 and 1500 in meters); 50, 100 and 200 backstroke, breaststroke and butterfly; and 100, 200, and 400 individual medleys. There are also freestyle and medley relays for men, women, and/or mixed teams. Open water swims are held in most locales during the summer and can range in distance from one to ten miles. Special events such as seeing how far you can swim in one hour are contested through the mail. USMS hosts two national championship meets a year. A short course (25-yard pool) championship is held in May and a long course (50-meter pool) championship is held in August. These four-day events rotate to different locations around the country. International championships are conducted periodically by Masters Swim organizations in countries throughout the world.[7]

Community Swim and Dive Teams

Numerous communities sponsor competitive swimming and diving teams for children and teens. The purpose is to offer opportunity to enjoy the healthy fun of swimming; to support individual achievement of personal bests; and to promote goal setting, life skills, and sportsmanship. Teams typically adhere to recognized swimming rules and swim the standard strokes of swim meets but in shorter lengths. Swimmers with limited or no competitive experience are provided stroke conditioning clinics as a recommended alternative. Teams are usually more active in the warmer months, and not directly associated with a national swim organization. Many swimmers who begin their competitive swimming experience on a local swim team proceed to join nationally governed teams.

Pool Rental

Competitive swimmers, particularly members of independent swimming associations, are accustomed to renting lane space for training as well as leasing entire facilities, either for long-term use or on a one- to three-day basis for special events and competitions. Although there is more than one accepted way to receive fees from swim teams, pool lane rental is usually based on cost per lane/per hour. Entire facilities leased on a per-day basis generally have a fixed schedule of costs for such use. Long-term facility leases are generally the product of negotiation and, accordingly, are too varied and specialized for consideration in the context of this study.

Sustainable Construction

The United States Green Building Council has developed a rating system to qualify and quantify sustainable design practices. Leadership in Energy & Environmental Design (LEED) uses established and innovative practices, standards and technologies to provide a voluntary, consensus-based national standard for green building. As a catalyst for justifiable credits to reduce environment exploitation and occupant safety, credits add up to four levels of green award certification that can lead to tax credits: Certified, Silver, Gold and Platinum. Credits are based on:

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

The following U.S. Green Building Council research is helpful in understanding the costs and advantages of designing a LEED certified building.

Cost of LEED (based on a sampling of 40 constructed buildings)

Platinum: 6.8%

Gold: 2.2%

Silver: 1.9%

Certified: 0.66%

Advantages of LEED

8 - 9% decrease in operating costs

7.5% increase in building values

6.6% improvement in ROI

3.5% increase in occupancy

3% rent increase

The assumptions in this report are consistent with a silver/gold rating protocol.[8]

Economic Growth

Encouraging residents to use public recreation facilities requires helpfulness of the promotional materials, perceived value against other providers, and public awareness that the facility addresses the prevailing needs and concerns of the community. The aquatic center must be seen as integral to economic development through:

- Real estate values and property tax
- Business attraction and retention
- Stimulating the creative economy
- Promoting tourism

According to the *Importance of Quality of Life in the Location Decisions of New Economy Firms*, "modern businesses typically choose communities with cultural and recreational amenities that will attract and retain a well-educated workforce."[9] This enlarges the tax base and stimulates the economy, which then provides more tax revenue that parks and recreation agencies can use to enhance or expand infrastructure, facilities, and programs. Park and recreation amenities stimulate happier and healthier families, positive business growth and economic development opportunities, contributing to quality of life. Creative, active people choose to live in communities with high quality amenities and experiences. Further, championship venues bring tourism revenue to local hotels, restaurants, and retail businesses.

Bundling Amenities

Locating aquatic centers adjacent to parks, schools, businesses and transportation hubs promotes accessibility. Bundling civic destination points can encourage customers to extend the duration of their visit, nurture community identity, and increase operational efficiency for those agencies responsible for park maintenance and facility security by minimizing demand on parking lots, access roads, and traffic signals.

If the site has an existing recreation facility, utilities more than likely are already in place. Electricity, natural gas, water and sewer services can be very expensive to introduce to a site from main trunk lines, especially if those lines are several miles away. Because bringing utilities to the project site has no programmatic or recreation value, the adjacency and availability of existing utilities can dramatically and positively impact site development costs with little or no negative impact to the end user. This allows the bulk of construction monies to be allocated for recreational improvements.

Many communities choose to co-locate outdoor and indoor facilities to share spaces without either facility interrupting the operations of the other. For example, a separate outdoor entrance to an aquatic center can accommodate patrons to that facility, minimizing congestion in the main building. Plans can be made for locker rooms to support both outdoor and indoor spaces, eliminating redundancy. Physically connecting the indoor aquatic spaces with those that are outside makes for the easy transition of patrons from outdoor to indoor swimming -- particularly crucial in cases of inclement weather. This also helps keep facility guests on site, thus maximizing opportunities for revenue generation.

Useful promotional tools include partnerships with local business centers, which can generate valuable word-of-mouth appeal for the facility. As noted, an aquatic center's economic well-being often depends on its proximity to well-traveled roads, highways and transportation hubs. Sites located in valleys or on hillsides adjacent to major highways can be developed into exciting destination points. A site in a valley near a main transportation artery can be oriented such that guests enter the recreation facility and instantly gain an overview of the park. This allows guests to immediately spot their favorite destinations and level of anticipation, yet because of enhanced transparency also provides for the safety and comfort of different age groups.

Marketing

Many marketing efforts will focus on the sales budget, developing an easy and concise means of explaining activities and fees to users, and creating a simple protocol for scheduling rentals and other events. Branding refers to the summation of all the amenities—state-of-the-art facilities, attractions, and programming—in an eye-appealing package with a competitive advantage. Strong aesthetic visuals include a cohesive logo, website, brochures, video spots, and staff uniforms. Competitive advantages may include cross-generational multiplicity, daily admission fees versus membership fees, cultural diversity, or perhaps the facility is the only championship venue in the region. For a loyal customer base, a great deal of marketing effort will be focused on customer outreach.

Customer Outreach

Marketers understand their target market—a vital investment to success—by identifying potential user groups while developing a clear message that explains how the aquatic center can fulfill their needs. Marketers define the identity and mission (sell the experience) by branding around the core competencies of the facility. They continue to benchmark successful recreation providers who are meeting the needs of a market segment and generating demand, while finding what makes it work and determining what would make it better. Their single most important ingredient is customer relationships (getting them and gaining their loyalty). Valuing customers and their opinions gives users a sense of ownership and pride in the facility, a perfect combination for continued word-of-mouth promotion. Identify user groups and verify that the message of each marketing campaign is being successfully communicated. Customers are a source of innovative ideas, thus marketers must:

- Identify user groups and verify that the message of each marketing campaign is being successfully communicated.
- Ask for feedback through focus groups and surveys of programs while being open to customers' observations and suggestions to help build a network within the community.
- Evaluate customer feedback to measure how users and nonusers view the image of the facility. Use the information to determine current levels of satisfaction, program fulfillment, and future needs.
- Make quantitative and qualitative improvements based on data (from what makes programs and services successful) so that services are consistently high quality to increase revenue.
- Set objectives for improvement to increase market share.
- Identify resources and means of implementation by listing key action plans and cycle times.
- Brand services with consistency; position each service to fit the market segment and promote the experience (benefit); people buy benefits.[10]

Marketing Development Plan

Take time to address market conditions and challenges; define steps to solve the challenges and improve all aspects of the event or program by using a marketing development plan. When developing a special event or program, answer the following questions.

1. What is the current situation you are addressing?
2. What are the market conditions?
3. What are the objectives of this marketing plan?
4. What are the key elements you wish to implement?
5. What are the timelines for each element?
6. What resources will be used for this implementation? (funds, staff, external support)
7. How will you measure the success of the plan?

Media and Community Relations

Traditional advertising such as program brochures, school flyers, visual displays, newspaper, radio, and television can target specific campaigns. As a not-for-profit entity, various local media outlets represent a valuable opportunity for free or low-cost publicity. Develop public relation contacts with local broadcast and print media by submitting articles or suggesting topics on the aquatic center's 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 or sponsor organizations 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 individual groups by focusing on wellness, safety, training, competition, or recreation. Utilize small segmented promotions to create an individualized plan for items of user interest, special events, and fun activities.

Corporate Sponsorship and Venue Signage

Shrinking funds and tightening budgets result in seeking opportunities to subsidize expenses of construction and operation. Marketing opportunities look to local, regional, and even national businesses for sponsorship and advertising signage. These opportunities can range from naming the entire facility for an individual or commercial benefactor, to naming individual rooms, benches, tiles, and so forth. Opportunities for revenue include selling permanent and temporary venue signage.

Digital Marketing

From your website itself to your online branding assets -- digital advertising, email marketing, online brochures, and beyond -- there's a huge spectrum of tactics and assets that fall under the umbrella of digital marketing. And the best digital marketers have a clear picture of how each asset or tactic supports their overarching goals.

Here's a quick rundown of some of the most common assets and tactics:

Assets

- Your website
- Blog posts
- E-books and whitepapers
- Infographics
- Interactive tools

- Social media channels (Facebook, LinkedIn, Twitter, Instagram, etc.)
- Earned online coverage (PR, social media, and reviews)
- Online brochures and look books
- Branding assets (logos, fonts, etc.)

Tactics

- Search Engine Optimization (SEO)
    - The process of optimizing your website to 'rank' higher in search engine results pages, therefore increasing the amount of organic (or free) traffic that your website receives.
- Content Marketing
    - The creation and promotion of content assets for generating brand awareness, traffic growth, lead generation, or customers.
- Inbound Marketing
    - Inbound marketing refers to the 'full-funnel' approach to attracting, converting, closing, and delighting customers using online content.
- Social Media Marketing
    - The practice of promoting your brand and your content on social media channels to increase brand awareness, drive traffic, and generate leads for your business.
- Pay-Per-Click (PPC)
    - A method of driving traffic to your website by paying a publisher every time your ad is clicked. One of the most common types of PPC is Google AdWords.
- Affiliate Marketing
    - A type of performance-based advertising where you receive commission for promoting someone else's products or services on your website.
- Native Advertising
    - Native advertising refers to advertisements that are primarily content-led and featured on a platform alongside other, non-paid content. BuzzFeed sponsored posts are a good example, but many people also consider social media advertising to be 'native' -- for example, Facebook advertising and Instagram advertising.
- Marketing Automation
    - Marketing automation refers to the software that exists with the goal of automating marketing actions. Many marketing departments should automate repetitive tasks such as emails, social media, and other website actions.
- Email Marketing
    - Companies use email marketing as a way of communicating with their audiences. Email is often used to promote content, discounts and events, as well as to direct people towards the business' website.
- Online PR
    - Online PR is the practice of securing earned online coverage with digital publications, blogs, and other content-based websites. It's much like traditional PR, but in the online space.

Unlike most offline marketing efforts, digital marketing allows marketers to see accurate results in real time. An effective digital marketing strategy combined with the right tools and technologies allows a business to trace all its sales back to a customer's first digital touchpoint with the business. This is called

attribution modeling, and it identifies trends in the way people research and buy products, helping businesses make more informed decisions about what parts of the marketing strategy deserve more attention, and what parts of the sales cycle need refining.

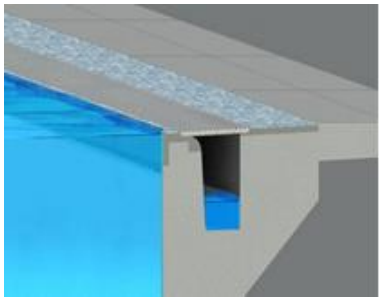
Connecting the dots between marketing and sales is immensely important -- according to Aberdeen Group, companies with strong sales and marketing alignment achieve a 20% annual growth rate, compared to a 4% decline in revenue for companies with poor alignment. Improving the customer's journey through the buying cycle by utilizing digital technologies can reflect positively on a business' bottom line.

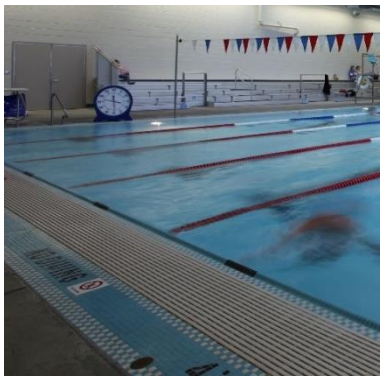
SWIMMING POOL STRUCTURE, MARKINGS & FEATURES

Perimeter Overflow and Recirculation

There are numerous gutter configurations available. The purpose of the overflow gutter in modern swimming pools is to receive, capture and direct the surface water to the filtration and water treatment system, usually through a surge tank. On a gutter type pool, a surge tank serves to accept water displaced by bathers as they enter the pool and to minimize surges and waves in a competition pool. As such, gutters are often used on larger pools that may warrant a more sophisticated approach to swimming pool operation.

Deck Level Gutter

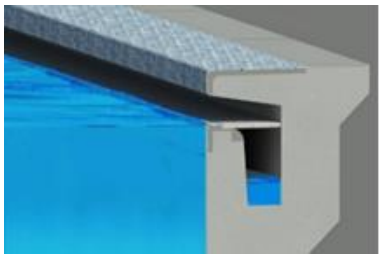




The deck-level or "rim flow" perimeter overflow system features a gutter lip that is very close to the elevation of the pool deck. This design enables even weaker swimmers to egress over the water's edge with little effort.

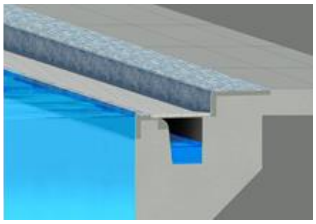
The disadvantage of the deck level configuration is that the decks around this type of pool are usually quite wet. Competitive swimmers may initially dislike this gutter profile because it is difficult to see a reference point above the water. A butterfly or breaststroke swimmer may even misjudge the actual location of the turning surface during a race. However, it has been the experience of Counsilman-Hunsaker that today's competitive swimmers are advanced in stroke training and the elimination of the point of end wall reference above the water level is not needed. At a very young age competitive swimmers are taught to base distance to end walls on floor markings and overhead backstroke pennants.

Fully Recessed Gutter



This design had once been preferred by many competitive swimmers and coaches. Under this design scenario the pool deck cantilevers over the gutter trough with the top of the deck being approximately 12 inch above the water. The overhang provides the competitive swimmer with a visual, vertical reference plane for the underwater wall. The recessed gutter captures the wave amplitude very effectively and keeps the pool decks relatively dry. The disadvantage is that the high overhang makes egress from the pool rather difficult and as a result some people must use one of the pool ladders (recessed steps with grab rails). Some swimmers have reported difficulty in hearing an instructor or coach because of water noise and activity noise in the pool due to the 12 inch (±) sideboard created by the deck overhang, which can create an echo chamber effect.

Roll Out Gutter

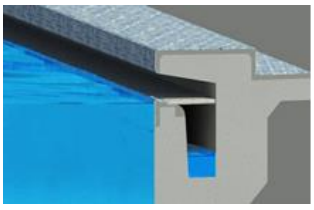


The third concept is the roll - out gutter profile. This design combines the features of the fully recessed and the deck level configurations. It consists of a gutter lip and grate at the water level. The pool deck is approximately 4 inch – 5 inch above the water surface and it forms a curb at the rear of the gutter grate. This curb contains much of the wave action and keeps the pool deck relatively free of water washing up and over the gutter grating.

The resulting seat condition is an ideal location for swim lessons but creates a change of elevation not seen in the deck level resulting in less usable deck. The lack of a cantilever overhang at the water's edge still allows swimmers to egress easily.

Parapet (Combination Rollout / Fully Recessed)

With roll - out gutters along the side of the competition racing pool, raised fully recessed parapets are frequently provided at the turning ends of the racecourse. These parapets create a 5 – 6 inch opening between the gutter lip and the parapet overhang. The face of the overhang provides the visual reference for the approaching swimmer (breaststroke, backstroke and butterfly). The parapet, because of its height, creates a raised platform above the pool deck. Starting blocks must be sized for this height. The parapet extends out into the usable deck area reducing the deck width and creating an obstacle on the deck.



Swimming Pool Shell Construction

Considering the Competition Pool and Therapy/Instructional Pool will be indoor pools, it is possible the exterior pool walls will be exposed to occupied basement level spaces. As a result, waterproofing will be critical to a successful design solution. The shell of a pool can be constructed of cast-in-place concrete, or PVC coated stainless steel (a Myrtha type system). The final surface in either solution may include tile.

Cast-in-place concrete remains the most common method of pool tank construction for indoor swimming pools. The concrete work for the pool is usually included with all other concrete installed for the building.

The all stainless-steel wall pool tank, which is often a pre-engineered solution is designed and fabricated by the manufacturer and assembled on site. After the tank is completely assembled, all piping is connected, and it operates as a conventional pool system. Manufacturers of such systems include Myrtha, Fluidra, and Natare.

Interior Finish

Pool finishes can vary from epoxy paint, cementitious finishes, to ceramic tile. Traditionally epoxy paint is the preferred solution for outdoor seasonal pools due to it durability and low cost. For interior pool, a cementitious finish (plaster) or ceramic tile are preferred. While ceramic tile is generally preferred as the best aesthetic finish it requires a significant capital cost investment. Therefore, a combination of tile and cementitious finishes is very common for interior pools. Ceramic tile is used for lane lines, wall targets, depth markings, warning signage and waterline boundaries.

Pool Markings

Pool markings are to be as per the National Federation of State High School Associations (NFSHA). Some combination of NCAA markings may also be used. Note that in addition to the swim lanes, it is customary to provide a buffer space between the outside lanes and pool wall.

Recessed rope anchors will be located between each racing lane. All of the above rope anchors will be featured in a recessed configuration on the four pool walls. These rope anchors can include varying combinations of racing lane divider lines for short course configurations.

Depth Markings

The respective depths of the pools should be marked in a manner meeting the minimum requirements of size, shape, color contrast and interval spacing as set forth by the jurisdictional regulations. If there are no regulatory stipulations, it is recommended that 6-inch high letters and/or numerals be considered in a slip-resistant finish located at the deep end, the shallow end, any breaks in slope and spaced no more than 25 feet apart around the pool perimeter.

Four-inch high, vertical pool wall depth markings at the pool perimeter are typically the minimum required by health department regulations. This should be verified with the local agency.

In Shallow areas, “No Diving” markers or symbols must be provided at the pool perimeter in the deck at pool depths 5 feet or less. These signs should be located approximately every 25 feet as required by the local agency.

Movable Bulkhead

The Stretch 25 Meter Pool options and the 50 Meter Pool options will feature movable bulkheads across the width of the pool. The bulkheads may range in width between 4 ft. to 6 ft. and approximately 5 ft. in vertical height. These bulkheads will then move horizontally along the pool gutter. The bulkheads will feature a variable buoyancy chamber(s) and ballast or trim chambers, which enables the bulkhead to raise off the gutter for ease of movement.

The 50 Meter Pool option with two bulkheads can then be divided into two 25 yard or 25 Meter courses, which can be horizontally translated to each end wall of the pool.

Provisions for Disabled Swimmers

Access for the physically disabled must be considered. In the United States pools with more than 300 feet of perimeter must incorporate two qualified means of access, one of which must either be a sloped entry or a compliant pool lift. Pools with less than 300 feet of perimeter are required to incorporate only one means of access which must either be a sloped entry or a compliant pool lift. Access must remain in place for the unassisted use of bathers. Further, if pool lifts are used, the depth of the pool should be at least 3 feet 6 inches to a maximum of 4 feet.

Pool lifts may be either hydraulic or electrically actuated (typically with a rechargeable battery).

It is recommended to provide anchors and water supply for future lifts. This will minimize functional obsolescence and renovation requirements if lifts are required in the future. Manufacturers of such systems include RehaMed, Spectrum, and Aqua Creek.

SWIMMING POOL MECHANICAL

Pool Filters

The selection of a filter system will be greatly influenced by the limitations created by the volume of wastewater that can be removed from the site. If this is a problem, the construction of a detention-holding tank is a common solution. The high-volume backwash discharge associated with high rate sand filtration is captured in a holding tank and then slowly drained off to the sewer system at the gpm flow rate that the sewer will accommodate.

Sand Filters

Sand pressure systems exist in two forms:

Rapid sand pressure filtration which operates at a flow rate of 3 GPM per square foot of filter area. Rapid sand filters are generally considered obsolete in the current swimming pool industry.

High Flow (high rate) pressure filtration which operates up to a flow rate of 15 GPM per square foot of filter area.

While many manufacturers rate their system at 20 GPM/square feet, field experience has shown that the lower flow rate results in better water quality. As a result, most health departments require a maximum of 15 GPM/square foot of filter area. The system will be designed to completely turn over the respective pool volume as per code.

Another application of sand filter systems to swimming pool water is the vacuum sand system. These units are at water level, require less space than the pressure sand system but long-term durability can be a problem.

While sand systems are very popular because of their simple operation, they have one considerable drawback as compared to regenerative media filters and that is the large water volume that is discharged during backwash. Multi-cell filters, however, can backwash in stages and thus produce less volume of sewer loading at one time. Manufacturers of such systems include Neptune Benson, Nemato, Paragon, and Pentair.

Regenerative Media Filters

Pressure diatomaceous earth systems have a lower backwash water volume than a pressurized sand backwash. But there is not a significant advantage over a pressure sand system with the exception that regenerative filters require less space and can produce a slightly clearer (polished) water.

Many jurisdictional authorities require a reclamation tank between the regenerative filter tank and the backwash outfall so that the spent media is captured and not discharged into the sanitary sewer. The captured media is then hauled to an approved dump site.

Regenerative media requires a more experienced operator, however, if the pool staff has proven experience, it is recommended to give strong consideration to regenerative media filtration. Manufacturers of such systems include Neptune Benson, Nemato, and Paragon Aquatics.

Deck equipment

Deck Anchors

Necessary deck anchors are to be provided for all removable equipment and fixtures such as recall stanchions, backstroke pennant stanchions, starting blocks, grab rails, handrails and stanchions for swag lines cordoning off the officials' walkway along pool perimeter.

Lifeguard Stands

Lifeguard stands will be movable, not permanently installed equipment. Movable units can be used for other purposes thus contributing to greater program flexibility. The appropriate quantity of stands are to be provided.

Ladders and Grab Rails

Where possible, recessed steps are recommended with removable grab rails for all pools. Three (3) sets plus a recessed stair are recommended for the 25 Meter x 25 Yard Pool option, six (six) sets are recommended for the Stretch 25 Meter Pool options and eight (8) sets are recommended for the 50 Meter Pool options.

Maintenance Equipment

The cleaning of the swimming pool is one of the most important tasks conducted in a natatorium. For that reason, the best systems are justified. A combination of several systems will provide maximum flexibility for the aquatic staff. Funds expended during construction will be quickly recaptured through lower labor costs.

Specifications should include several of the following:

- A portable vacuum cleaning system, with or without a cartridge filter and an electric 1 ½ to 2 HP pump/motor mounted on a handcart with pneumatic tires, vacuum head, telescopic pole, and a 50-feet 1 ½ inch vacuum hose
- Hose bibs provided on each wall of the natatorium for maintenance purposes (maximum of 150 feet apart)
- Commercial swimming pool test kits
- Underwater robot vacuum system: Aquavac Commander or Ultramax

Safety Equipment

- Provide the following as required by health department regulations
- Approved life rings with throw ropes 1 ½ times the width of pool (at each guard stand)
- Shepherd's hook minimum 12 feet in length (eight wall-mounted)
- A throwing rope at least 1 ½ times width of pool
- First aid kit, as per health department regulations
- Eye wash station(s)
- Fire extinguishers, as per local code
- Spineboard (2)

- Stretcher, if required by health department
- Rescue tube (5)

Water Polo Goals

Provide one set of floating water polo goals for the primary field of play. Deck anchored water polo goals for cross pool fields may be provided. With the 50-meter pool option two (2) cross course fields of play could be set up.

Lane Line Storage

Lane Reel Storage

The pool will require a large number of floating racing lane lines and the storage of these units requires planning. Storage can take place with underground bins, movable reels, storage rooms, deck storage or a combination of the above.

Below Deck Storage

An option for below-deck lane line storage is available with a combination of a concrete vault alongside or end of the pool and a lane line trap system. The below-deck option can eliminate the need for lane line reels and reduce equipment clutter on the pool deck and or required storage space.

SUPPORT SPACES

Team Locker Rooms

The traditional design solution for locker rooms is dedicated spaces based on gender. Given the characteristics of the users of the aquatic center, and the need to accommodate various age groups, gender specific spaces will be needed for both athletics and non-athletics.

All lockers should be installed on a 6-inch ledge to facilitate floor cleaning or on an 18-inch concrete bench platform. It is recommended that locker counts for team spaces be sufficient to accommodate not only the current team needs, but the anticipated future needs as well. A water extractor for swimming suits should be available in each locker room.

Boys and Girls Locker Rooms

Separate locker rooms from the Team Locker Rooms should be provided for boys and girls. These spaces will accommodate physical education users and public swim users. A water extractor for swimming suits is a valuable resource in each locker room. The water serving the facility shall be supplied from a potable water source. It is recommended that locker counts for each the boys and girls locker room spaces be sufficient to accommodate not only the current needs, but the anticipated future needs as well. The required number of fixtures will likely be determined by local code

Restroom/Shower/Drying Areas

A shared space for restrooms/shower and drying areas could be provided, allowing access from both the Team Locker/Changing area and the general Boy's and Girl's Locker/Changing spaces. These areas typically include lavatories, water closets, urinals, showers and sinks. They may also include grooming stations and feminine care dispensers and receptacles. The water serving the facility shall be supplied from a potable water source. The number of fixtures will be determined by local code.

Coaches/Aquatic Director Office

A separate office space should be provided for Coaching staff and the Aquatic Director/Pool Operator. It is likely that some of these roles will be combined allowing for a reduction in office spaces. It is recommended that a gender-neutral locker room space be provided complete with sinks. Individual changing rooms or stalls could be provided accommodating either men or women. Gender specific toilet and shower areas could be provided for each men and women, unisex restrooms, with a minimum of two (2) could be provided.

Public Restroom Facilities

Rest room facilities should be provided for the public and administrative personnel in the lobby area and on concourses at the spectator seats. These spaces should include a toilet, urinal and sink, as well as a diaper changing station.

Control Office

The natatorium control office will be the control and command station for the aquatic area. It should, preferably, have an overlook of all of the bodies of water and contain the controls for the natatorium

overhead lighting system, the public address system/sound system, and monitoring systems for the natatorium environmental conditions, i.e., air temperatures, water temperatures, relative humidity, chemical levels, and recirculation system components, such as, motors, valves, pumps, etc.

Wet Classroom

A classroom in the natatorium that can be used for many purposes such as classes, team meetings, coaches' meetings, lectures, seminars, scratch meetings, etc. This space may or may not be designed to be "wet".

Dry Corridor to Pool Deck

A corridor should be provided from the outer hallway to the pool deck, which will enable staff and visitors to by-pass the locker rooms and walk directly to the pool deck. This is an efficient feature especially if the hallway is adjacent to the pool control office. It can also serve a valuable purpose during swim meets, when it is used by the many officials and/or competitors.

Food Service / Vending

Provide in the building lobby near the front entrance of the center for concession / vending machines is recommended.

Storage Room

Ample storage space with double doors (without mullion) should be provided at the pool deck level at convenient locations in the natatorium with access for aquatic equipment such as:

- Kickboards
- Flotation devices
- Robot pool cleaner
- Vacuum equipment, pole, hose, head, pump, filter
- Starting platforms
- Timing equipment/touch pads (secured in cage or room)
- Racing lane reels
- Portable lift
- Sound system
- Miscellaneous swim team equipment

Filter Room and Chemical Room

The main filter room will contain the water treatment system for the pools. This room should also be adjacent to the chemical storage and chemical feeder rooms; however, there are exceptions to this adjacency.

Each chemical room will feature a corrosion-resistant exhaust fan, which will draw air from 6 inch off the floor of the chlorinator room and discharge it to the outside at the rate of 12 room volumes per hour. Delivery access must be provided for the filter and chemical rooms.

Note that surge tanks will be required for swimming pools with gutters. These units are located in the filter room, under the pool deck or a combination of the two. The surge tank size will depend upon the designed maximum bather load for the respective pools and/or health department regulations.

The filter room may also house the heater or heat exchanger for each of the pools.

NEEDS ASSESSMENT

Kickoff Meeting Notes

The following notes are meant to provide a synopsis of the initial meetings for the Yakima, WA Martin Luther King Jr. Park Community Swimming Pool Feasibility Study. Miklos Valdez with Counsilman-Hunsaker was on-site March 12 and 13, 2019 to meet with the project committee and tour potential sites. These notes are meant to provide an overview of the discussions during the site visit.

What we heard

- Like easy entries into the water (Zero Depth)
- ADA Accessibility
- Swimming/Lap Lanes
- Kids slides/Tot slides
- Swim lesson ledges
- Recreation based activities
- Multiuse areas
- Teen features
- Sprayground

Stakeholder and Community Input Meetings

What we heard

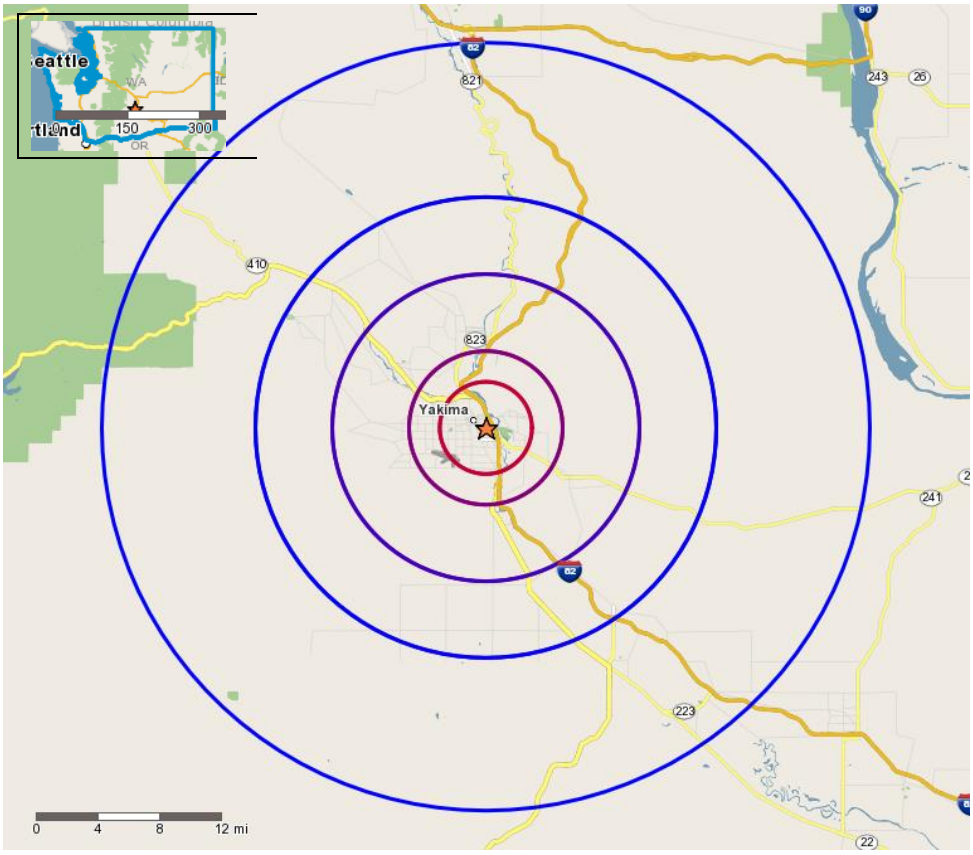
- Like the size of the facilities
- Like the ability for multiple use areas
- Like the zero depth areas
- Would like to see
    - 4 lap lanes or more square footage
    - Family rate for day pass
    - Phased approaches
    - Teen spaces

MARKET OVERVIEW

Factors that can influence attendance include projections for growth/decline of population, income levels, and age groups. Market studies are used to predict how relevant products, services, and fees are to residents. Originating from the proposed site for the Aquatic Center, the primary area is assumed as a 30-minute drive time, and the service area is assumed as a 15-minute drive time. Thus, a study of demographic patterns in the area is helpful in projecting usage rates. The resident market area has been divided into the following drive times.

Distance from Site

- 0 – 3 Miles
- 3 – 5 Miles
- 5 – 10 Miles
- 10 – 15 Miles
- 15 – 25 Miles



Population

The following chart presents a summary of market area population with concentric rings surrounding the proposed site for the aquatic center. The 2010 U.S. Government Census was used to estimate the population for 2019 and to make projections for 2024.

MARKET AREA POPULATION BY DISTANCE

	Population						Average Annual Change			
	2010		2015		2020		2010-2015		2016-2020	
Radius	Number (000's)	Percent of Total	Number (000's)	Percent of Total	Number (000's)	Percent of Total	Number (000's)	Percent Change	Number (000's)	Percent Change
0 to 3 Miles	67.5	33.2%	69.9	33.5%	69.0	32.6%	0.5	0.7%	-0.2	-0.3%
3 to 5 Miles	34.0	16.7%	34.9	16.7%	35.6	16.8%	0.2	0.5%	0.1	0.4%
5 to 10 Miles	45.0	22.2%	46.5	22.3%	49.6	23.5%	0.3	0.6%	0.6	1.3%
Subtotal	**146.5**	**72.1%**	**151.3**	**72.5%**	**154.1**	**72.9%**	**1.0**	**0.6%**	**0.6**	**0.4%**
10 to 15 Miles	24.7	12.1%	25.4	12.2%	25.2	11.9%	0.2	0.6%	0.0	-0.2%
15 to 25 Miles	32.1	15.8%	32.1	15.4%	32.0	15.2%	0.0	0.0%	0.0	0.0%
Subtotal	**56.7**	**27.9%**	**57.5**	**27.5%**	**57.2**	**27.1%**	**0.2**	**0.3%**	**-0.1**	**-0.1%**
Total (0-25 Miles)	203.3	100.0%	208.9	100.0%	211.3	100.0%	1.1	0.5%	0.5	0.2%
Yakima, WA	**91.2**		**93.5**		**93.7**		**0.5**	**0.5%**	**0.0**	**0.0%**

Source: Alteryx

Age

Age distribution is another population characteristic used to determine the type and level of use of any type of program. The following table provides the number of residents and the percentage of total population for each age group compared to the U.S. column, which identifies the national average.

MARKET AREA AGE DISTRIBUTION

Age Groups	0 to 3 Miles		3 to 5 Miles		5 to 10 Miles		10 to 15 Miles		15 to 25 Miles		Yakima, WA		U.S. Age
	#	%	#	%	#	%	#	%	#	%	#	%	Population
Age 0-4	6,425	9.2%	2,183	6.3%	2,844	6.1%	2,029	8.0%	2,786	8.7%	7,761	8.3%	6.5%
Age 5-9	6,201	8.9%	2,227	6.4%	3,307	7.1%	2,296	9.0%	3,049	9.5%	7,632	8.2%	6.5%
Age 10-14	5,451	7.8%	2,279	6.5%	3,545	7.6%	2,182	8.6%	2,955	9.2%	6,932	7.4%	6.6%
Age 15-19	5,059	7.2%	2,097	6.0%	3,304	7.1%	2,155	8.5%	2,734	8.5%	6,390	6.8%	6.9%
Subtotal	**23,136**	**33.1%**	**8,786**	**25.2%**	**13,000**	**28.0%**	**8,662**	**34.1%**	**11,524**	**35.9%**	**28,715**	**30.7%**	**26.5%**
Age 20-24	5,531	7.9%	2,078	6.0%	2,568	5.5%	1,809	7.1%	2,425	7.6%	6,800	7.3%	7.1%
Age 25-29	5,515	7.9%	2,237	6.4%	2,482	5.3%	1,540	6.1%	2,124	6.6%	6,992	7.5%	6.8%
Age 30-34	4,947	7.1%	2,035	5.8%	2,598	5.6%	1,480	5.8%	1,889	5.9%	6,351	6.8%	6.6%
Age 35-39	4,548	6.5%	1,923	5.5%	2,747	5.9%	1,553	6.1%	1,905	5.9%	5,897	6.3%	6.3%
Age 40-44	4,078	5.8%	1,831	5.2%	2,794	6.0%	1,510	5.9%	1,812	5.6%	5,301	5.7%	6.8%
Age 45-49	3,831	5.5%	1,947	5.6%	2,925	6.3%	1,558	6.1%	1,822	5.7%	5,028	5.4%	7.1%
Age 50-54	3,724	5.3%	2,131	6.1%	3,164	6.8%	1,535	6.0%	1,804	5.6%	5,118	5.5%	7.3%
Age 55-59	3,537	5.1%	2,247	6.4%	3,313	7.1%	1,543	6.1%	1,790	5.6%	5,031	5.4%	6.5%
Age 60-64	3,025	4.3%	2,285	6.5%	3,166	6.8%	1,280	5.0%	1,542	4.8%	4,707	5.0%	5.7%
Age 65-69	2,569	3.7%	2,221	6.4%	2,873	6.2%	1,056	4.2%	1,277	4.0%	4,138	4.4%	4.2%
Age 70-74	1,922	2.7%	1,631	4.7%	2,024	4.4%	795	3.1%	917	2.9%	3,067	3.3%	3.1%
Age 75-79	1,350	1.9%	1,260	3.6%	1,336	2.9%	512	2.0%	584	1.8%	2,225	2.4%	2.4%
Age 80-84	988	1.4%	930	2.7%	812	1.7%	324	1.3%	366	1.1%	1,695	1.8%	1.9%
Age 85+	1,244	1.8%	1,379	3.9%	677	1.5%	267	1.1%	308	1.0%	2,428	2.6%	1.9%
TOTAL:	**69,945**	**100.0%**	**34,921**	**100.0%**	**46,479**	**100.0%**	**25,424**	**100.0%**	**32,089**	**100.0%**	**93,493**	**100.0%**	**100%**
Median Age	30.8		41.1		39.7		32.4		29.9		33.3		37.0

Source: Alteryx

Income

To a certain degree, the likelihood of residents to engage in aquatics depends on their ability to pay for admission and program fees. In the following chart, the U.S. national average is set at 1.00. Index refers to the percentage higher or lower than the national average.

MARKET AREA INCOME

Radius	Per Capita Incomes		Median Household Incomes	
	Dollars	Index	Dollars	Index
0 to 3 Miles	$17,501	0.66	$38,354	0.73
3 to 5 Miles	$30,548	1.15	$55,914	1.06
5 to 10 Miles	$30,262	1.14	$64,542	1.23
10 to 15 Miles	$19,282	0.73	$51,739	0.98
15 to 25 Miles	$17,363	0.66	$48,163	0.92
Yakima, WA	$22,626	0.85	$44,214	0.84
Total U.S.	$26,464	1.00	$52,599	1.00

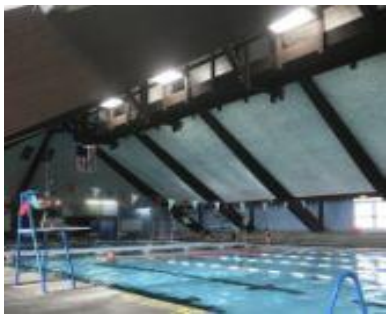
Source: Alteryx

Area Providers

The recreation industry is a competitive market vying for disposable income driven by population trends, income levels, demographic profiles, and favorable locations. Large aquatic centers and destination facilities offer a grand scale of cutting-edge amenities, deliver a unique customer experience, and draw from a large radius. Small to medium aquatic centers compete by offering family amenities in a cozy atmosphere, thus delivering a friendly customer experience to the local market.

Yakima, WA

Lions Pool (0.9 miles)
509 W Pine Street
Yakima, WA
509.575.6046



Features
Indoor pool
Open year-round

Programs
Recreational Swimming
Lap Swim and Water Walking
Adult Water Fitness Classes
Aquacise
Hydrofit
Aqua Zumba
Swim Lessons

Fees
Youth $2.00
Adults $4.00
Family of 6 $13.00 (up to 2 adults and 4 children)
Family of 8 $15.00
Honored Citizen (62 years old or with disabilities) $2.25

Franklin Pool (1.9 miles)

2102 Tieton Drive
Yakima, WA 98902
509.575.6035

Features
Outdoor pool
Open June through August

Programs
Learn to Swim
Recreational Swim
Saturday & Sunday Recreational Swim
Adult Water-Walking and Lap Swims

Water Fitness Classes: Aqua Zumba
Paws in the Pool

Fees
10 Punch Card
- Youth $17.00
- Adults $35.00
- Honored Citizen $21.00

3 months
- Youth $52.00
- Adults $105.00
- Family of 6 $227.00
- Family of 8 $300.00
- Honored Citizen $59.00

Honored citizens are people over 62 years old or with disabilities.
Youth is ages 4-17 (3 and under are free with a paying adult)

Selah Swimming Pool (4.2 miles)

214 South 3rd Street
Selah, WA 98942
509.698.7308

Miller Pool (4.8 miles)

502 North 4th Street
Selah, WA 98942
509.575.6055

Moxee Pool (7.9 miles)

North Iler Street
Moxee, WA 98936
509.248.8067

Naches Swimming Pool (15.0 miles)

105 W 4th Street
Naches, WA 98937
509.653.2353

Features
Outdoor Pool
Open June through August

Programs
Open Public Swim
Adult Lap Swim
Water Walking

Fees
Open Public Swim
- Adults $3.50
- Seniors $1.00
- Babies Under 2 $1.00

Adult Lap Swim
- $1.00 per session or $35.00 season pass

Water Walking
- $1.00 per session or $35.00 season pass

Season Passes
- Single Person $80.00
- Family members in Same Household $180.00
- Adult Lap Swim $35.00

City of Toppenish Pool (18.5 miles)

20 Asotin Avenue
Toppenish, WA 98948
509.865.2220

Features
Outdoor 50-meter pool
Open during summer months

Programs
Public Swim
Swim Lessons
Private Pool Rentals
Swim Team
Swim Meets

Ellensburg Memorial Pool (36.0 miles)

815 E 6th Avenue
Ellensburg, WA 98926
509.962.7210

Features
25-meter indoor pool
Hot tub
Training pool
Wet/dry sauna
Fitness center
Play shower
1-meter diving board

Programs
Lap swim
Swim lessons
Waterfit H2O Exercise
Family Swim
Sauna
Hot tub

Fees
Single Price
- Youth (0-17 years) $3.00
- Adults (18-59 years) $6.00
- Senior and Veterans (60+ years or service) $3.00
- Family up to 2 adults and youth living at the same residence $6.50)

10 Visit
- Youth (0-17 years) $21.90
- Adults (18-59 years) $43.80
- Senior and Veterans (60+ years or service) $21.90
- Family up to 2 adults and youth living at the same residence $N/A)

3-Month Pass
- Youth (0-17 years) $66.25
- Adults (18-59 years) $132.50
- Senior and Veterans (60+ years or service) $66.25
- Family up to 2 adults and youth living at the same residence $232.05)

OPTIONS FOR CONSIDERATION

The feasibility study developed three options for consideration. The following estimates were developed by Counsilman-Hunsaker. Recent project bid figures of similar projects have been used as well as national estimating guides and local cost adjustment factors. The hard construction cost figures have been supplemented by a development cost factor, which will include such "soft" costs as professional fees, survey, geotechnical report, document reproduction, advertisement for bids, and all anticipated expenses related to the administration of the project. The sum of these two cost figures is the total project cost highlighted in yellow at the bottom of each chart.

Option 1

Indoor features

- Lobby
- Offices
- Locker rooms
- Outdoor restrooms
- Classroom/party room
- Concessions
- Storage

Aquatic Elements

- 2,763 sq. ft. recreation pool
  - 4 - 25 Yard Lap Lanes
  - Crossing activity
  - Waterslide
- 3,739 sq. ft. tot pool
  - Tot slide
  - Play structure
- 1,235 sq. ft. sprayground

Cost: $7.4 M

OPINION OF PROJECT COST: OPTION 1				
	Description	Unit	Amount	Opinion of Cost
Offices/Support Spaces			3,700	$1,123,200
	Lobby	Sq. Ft.	150	
	Aquatic Manager	Sq. Ft.	150	
	Lifeguard/First Aid	Sq. Ft.	150	
	Locker Rooms	Sq. Ft.	1,100	
	Pool Mechanical Room	Sq. Ft.	1,100	
	Pool Storage	Sq. Ft.	400	
	Concessions	Sq. Ft.	150	
	Classroom/Party Room	Sq. Ft.	500	
Aquatic Center			7,728	$2,570,440
	Recreation Pool	Sq. Ft.	2,763	
	Slide	Allowance	1	
	Crossing Activity	Allowance	1	
	Tot Pool	Sq. Ft.	3,730	
	Tot Slide	Allowance	1	
	Play Structure	Allowance	1	
	Spray Ground	Sq. Ft.	1,235	
Support			23,184	$494,428
	Outdoor Deck	Sq. Ft.	15,456	
	Fence	Linear Ft.	609	
	Overhead Lighting	Sq. Ft.	23,184	
	Shade Structures	Quantity	8	
Efficiency			740	$148,000
	Circulation and Walls (20%)	Sq. Ft.	740	
Unit			Sq. Ft.	Opinion of Cost
Site Construction Costs (landscaping, drainage, walks)				$1,104,960
Total Construction Costs		**Sq. Ft.**	**27,624**	**5,441,028**
Furniture, Fixtures, Equipment				$193,368
Subtotal				$5,634,396
Preliminary Design Contingency		10.0%		$563,440
Inflation (1 Year)		10.0%		$563,440
Indirect Costs		10.0%		$619,784
Total Estimated Project Costs:				$7,381,059
Say				**$7,400,000**
Source: Counsilman-Hunsaker				

Option 2

Indoor features

- Lobby
- Offices
- Locker Rooms
- Outdoor Restrooms
- Classroom/party room
- Concessions
- Storage

Aquatic Elements

- 5,167 sq. ft. recreation pool
  - 4 - 25 Yard Lap Lanes
  - Crossing activity
  - Vortex
  - Water slides
  - Large bowl slide
- 2,139 sq. ft. tot pool
  - Family slide
  - Play structure
- 1,235 sq. ft. sprayground

Cost: $10.4 M
Phase 1: $9.4 M

OPINION OF PROJECT COST: OPTION 2				
	Description	Unit	Amount	Opinion of Cost
Offices/Support Spaces			4,200	$1,259,200
	Lobby	Sq. Ft.	150	
	Aquatic Manager	Sq. Ft.	150	
	Lifeguard/First Aid	Sq. Ft.	150	
	Locker Rooms	Sq. Ft.	1,200	
	Pool Mechanical Room	Sq. Ft.	1,500	
	Pool Storage	Sq. Ft.	400	
	Concessions	Sq. Ft.	150	
	Classroom/Party Room	Sq. Ft.	500	
Aquatic Center			8,855	$4,434,720
	Recreation Pool	Sq. Ft.	5,167	
	Slides	Allowance	2	
	Crossing Activity	Allowance	1	
	Vortex	Allowance	1	
	Tot Pool	Sq. Ft.	2,139	
	Play Structure	Allowance	1	
	Tot Slide	Allowance	1	
	Spray Ground	Sq. Ft.	1,235	
	Bowl Slide	Allowance	1	
	Slide Plunge	Sq. Ft.	314	
Support			26,565	$549,723
	Outdoor Deck	Sq. Ft.	17,710	
	Fence	Linear Ft.	652	
	Overhead Lighting	Sq. Ft.	26,565	
	Shade Structures	Quantity	8	
Efficiency			840	$168,000
	Circulation and Walls (20%)	Sq. Ft.	840	
Unit			Sq. Ft.	Opinion of Cost
Site Construction Costs (landscaping, drainage, walks)				$1,264,200
Total Construction Costs		**Sq. Ft.**	**31,605**	**7,675,843**
Furniture, Fixtures, Equipment				$221,235
Subtotal				$7,897,078
Preliminary Design Contingency		10.0%		$789,708
Inflation (1 Year)		10.0%		$789,708
Indirect Costs		10.0%		$868,679
Total Estimated Project Costs:				$10,345,172
Say				**$10,400,000**
Source: Counsilman-Hunsaker				

Option 3

Indoor features

- Lobby
- Offices
- Locker Rooms
- Outdoor Restrooms
- Classroom/party room
- Concessions
- Storage

Aquatic Elements

- 5,642 sq. ft. recreation pool
    - 3 - 25 Yard Lap Lanes
    - Crossing activity
    - Vortex
    - Water slides
    - Lounge area
- 873 Sq. Ft. Teen Pool
    - Bowl slide
    - Rope swing

2,139 sq. ft. tot pool
family slide
Play structure
1,235 sq. ft. sprayground

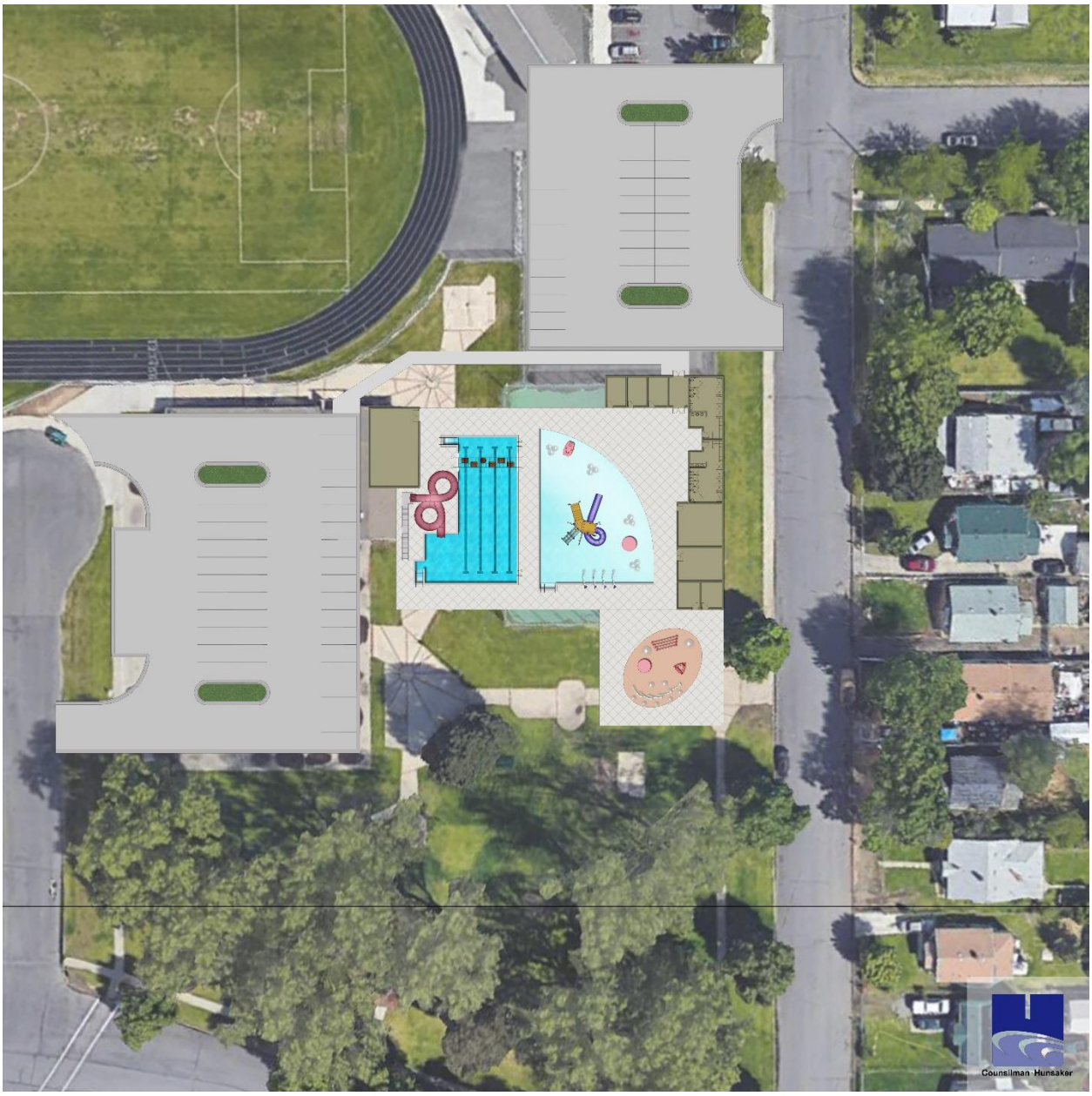
Cost: $11.3 M
Phase 1: $9.8 M

OPINION OF PROJECT COST: OPTION 3				
	Description	Unit	Amount	Opinion of Cost
Offices/Support Spaces			4,600	$1,387,200
	Lobby	Sq. Ft.	150	
	Aquatic Manager	Sq. Ft.	150	
	Lifeguard/First Aid	Sq. Ft.	150	
	Locker Rooms	Sq. Ft.	1,400	
	Pool Mechanical Room	Sq. Ft.	1,700	
	Pool Storage	Sq. Ft.	400	
	Concessions	Sq. Ft.	150	
	Classroom/Party Room	Sq. Ft.	500	
Aquatic Center			9,889	$4,740,600
	Recreation Pool	Sq. Ft.	5,642	
	Slides	Allowance	2	
	Crossing Activity	Allowance	1	
	Tot Pool	Sq. Ft.	2,139	
	Play Structure	Allowance	1	
	Tot Slide	Allowance	1	
	Spray Ground	Sq. Ft.	1,235	
	Slide Plunge	Sq. Ft.	873	
	Bowl Slide	Allowance	1	
	Rock Wall	Allowance	1	
	Rope Swing	Allowance	1	
Support			29,667	$600,191
	Outdoor Deck	Sq. Ft.	19,778	
	Fence	Linear Ft.	689	
	Overhead Lighting	Sq. Ft.	29,667	
	Shade Structures	Quantity	8	
Efficiency			920	$184,000
	Circulation and Walls (20%)	Sq. Ft.	920	
Unit			Sq. Ft.	Opinion of Cost
Site Construction Costs (landscaping, drainage, walks)				$1,407,480
Total Construction Costs		**Sq. Ft.**	**35,187**	**8,319,471**
Furniture, Fixtures, Equipment				$246,309
Subtotal				$8,565,780
Preliminary Design Contingency		10.0%		$856,578
Inflation (1 Year)		10.0%		$856,578
Indirect Costs		10.0%		$942,236
Total Estimated Project Costs:				$11,221,172
Say				**$11,300,000**
Source: Counsilman-Hunsaker				

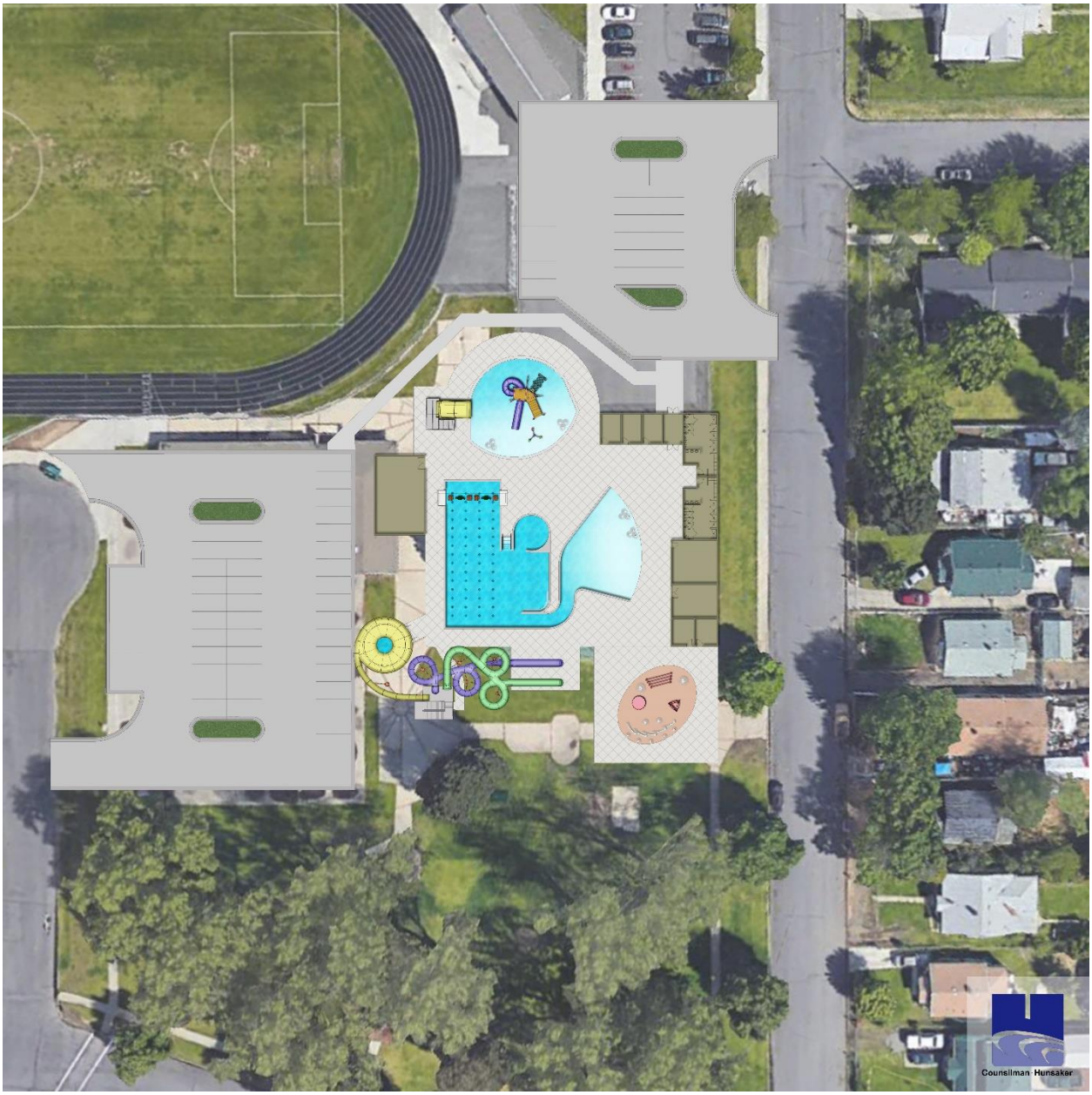
SITE PLAN – FULL LAYOUT

The following graphics depict the size and scale of the aquatic center options.

Option 1



Option 2

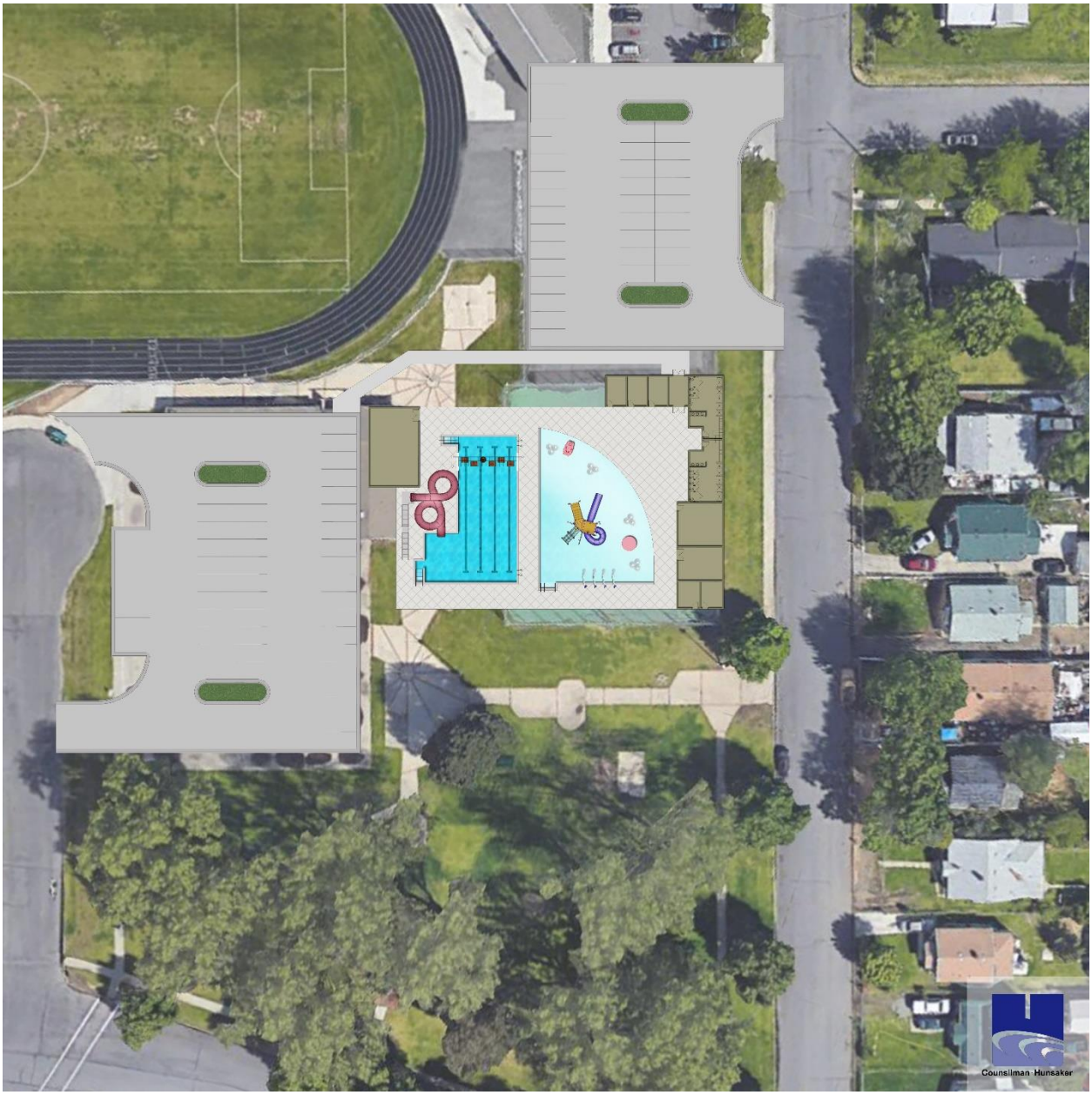


Option 3

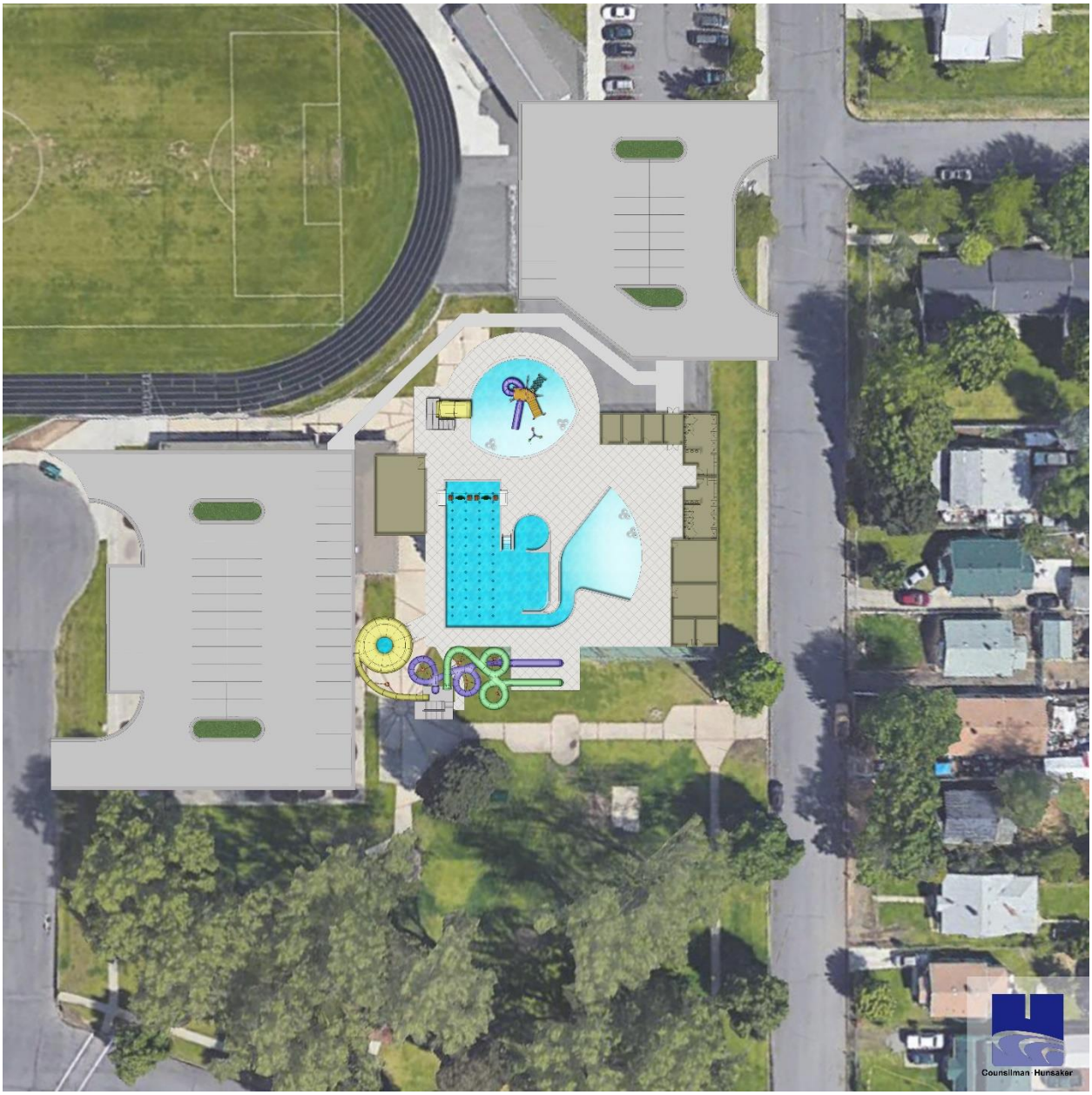
SITE PLAN – NO SPRAYGROUND

The following graphics depict the size and scale of the aquatic center options without the sprayground feature.

Option 1



Option 2



Option 3

OPERATIONAL ANALYSIS

Revenue / Expense Assumptions

The following rates were used in the development of the revenue and expense analysis, assuming the facility would be owned and operated by Yakima, WA.

- Operating schedule
  - Summer Season

- Rate structure
  - $5.00 daily admission
  - $130/swimmer (average) for summer league
  - $40 for 8 classes/session
  - $6/session for water fitness
  - $200/session for lifeguard certification
  - $200 for 2-hour party rental
  - $270/hour full pool rental

- Personnel
  - Full time not included
  - Part-time (pool managers, lifeguards, front-desk)

- Utilities
  - Electric based on $0.10 per KWH
  - Water based on $4.00 per 1,000 gallons
  - Liquid Chlorine, $2.00/gallon
  - Pool Heating, $1.00/therm

- Revenue generation
  - Daily visits
  - Aquatic programs (swim lessons, lifeguard courses)
  - Rentals (swim team, swim meets, parties)

Operational Partnership Opportunities

While the following revenue and expense projections are based on a school district owned and operated aquatic center, there are several other options that could be explored for the operation of the proposed aquatic center.

- **Public/Public Partnership** – In this scenario the school district would partner with another public entity who would be responsible for managing the daily operations of the aquatic center, such as the City of Blue Ash or City of Montgomery. The School District would still own the facility and budget for a portion of the operations and maintenance of the facility.
- **Public/Private Partnership** – Through a public/private partnership, the School District would hire a private management company to take care of the day to day operations. An annual contract would be signed that stipulated the breakdown of responsibilities for each entity, the division of operational and capital expenses, as well as terms for payment.
- **Public/Non-Profit Partnership** – In the public/non-profit partnership, the School District would turn over the operation of the aquatic center to a non-profit agency such as a YMCA. Through this partnership, the aquatic center could remain the property of the School District but become a "branch location" for a local YMCA. The revenue generated from the facility would go to the YMCA and the School District would have a long-term, non-compete agreement with the YMCA for lane hours and swim meets. Typically, in this model the School District would also contribute operational funds, as well as assist with major capital expenses.

Expense Analysis

An analysis of operating expenses includes a detailed budget 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 in the area were reviewed and taken into account to form projections.

Facility Staff

Projected annual payroll expenses reflect benefits and taxes. Scheduling employees is determined by programming demand and management procedure. Wherever possible, pay rates were determined using existing job classifications and wage scales. Cost for direct group programming expense and other employees associated with program income are factored in the expense table as cost against net programming revenue.

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 liquid chlorine 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.

Heating/Cooling

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 are based on utility rate information provided by the project committee and includes both demand and energy costs. The table conveys the estimated electricity costs for all options.

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.

Repair and Maintenance

Budget allowance for facility repairs and general maintenance associated with the building and pool mechanical system.

Insurance

Insurance denotes liability for more people and more structure based on visits and labor and using the current industry average rates.

Capital Replacement Fund

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. The capital replacement fund sets money aside for repairs/replacement.

Facility Expenses

The following table reflects a summary of all operating expenses, assumptions, and estimates detailed by the expense category.

Direct Facility Expense Budget			
	Option 1	Option 2	Option 3
Facility Staff			
Full Time Employment	Not Included	Not Included	Not Included
Summer Employment	$145,586	$156,399	$193,646
Equipment Cost	$3,000	$3,720	$4,080
Training	$5,000	$5,000	$6,000
Total Labor	**$153,586**	**$165,119**	**$203,726**
Contractual Services			
Insurance	Not Included	Not Included	Not Included
Repair and Maintenance	$18,500	$25,900	$28,100
Total Contractual Services	**$18,500**	**$25,900**	**$28,100**
Commodities			
Operating Supplies	$11,100	$15,540	$16,860
Chemicals	$9,609	$13,179	$15,414
Advertising	$36,000	$44,000	$51,000
Total Commodities	**$56,709**	**$72,719**	**$83,274**
Utilities			
HVAC	$7,619	$8,649	$9,472
Electricity	$26,646	$33,187	$35,152
Pool Heating	Not Included	Not Included	Not Included
Data/Communications	$1,296	$1,296	$1,296
Trash Service	$720	$720	$720
Water & Sewer	$6,849	$8,695	$10,004
Total Utilities	**$43,130**	**$52,547**	**$56,644**
Total Operating Expenses	**$271,925**	**$316,286**	**$371,744**
Capital Replacement Fund	$37,000	$51,800	$56,200
Total Expense	**$308,925**	**$368,086**	**$427,944**

Labor Expense

The following chart details the number of part-time labor hours for lifeguards, pool managers and recreation attendants to staff the aquatic center.

	Hours Per Day			Cost Per Hour			Rate with Overhead			Days per Season			Total Employer Expense		
Job Description	Option 1	Option 2	Option 3	Option 1	Option 2	Option 3	Option 1	Option 2	Option 3	Indoor	Outdoor	Spraygound	Option 1	Option 2	Option 3
Summer															
Cashier	22	22	22	13.16	13.16	13.16	15.79	15.79	15.79	75	75	75	26,057	26,057	26,057
Aquatic Leads	13	13	13	15.90	15.90	15.90	19.08	19.08	19.08	75	75	75	18,603	18,603	18,603
Lifeguard	84	93	124	13.35	13.35	13.35	16.02	16.02	16.02	75	75	75	100,926	111,740	148,986
Summer Total	119	128	159										$145,586	$156,399	$193,646
Annual Labor Expense													**$145,586**	**$156,399**	**$193,646**

Revenue Analysis

Revenue analysis reviews facility capacity analysis, per capita spending trends, and special user group usage. Developing an opinion of financial impact is an important component in evaluating facility opportunities. Projected attendance is based on population trends. Fee structure is based on fees from season pass holders and other users to project per capita income. Revenue is estimated, taking recommended fee schedules into account. All revenue assumptions reflect multiplying attendance by per capita.

Fee Structure

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

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 that use the facility. 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.

Program Revenue

The following chart is a summary of the revenue opportunities for the Aquatic Center, including swim lessons, water fitness classes and lifeguard courses. The expenses for each program are taken out, totaling a net revenue for aquatic programs. The programming model is based on annual growth in program participants and a price hike of 10% in year 3 and 5% in year 5.

Option 1

Aquatics Programs Revenue & Expenses

Revenue	Mgmt. Assump.	Price Per Session Year 1	Price Per Session Year 5	Total Per Session Year 1	Total Per Session Year 5	No. Sellable Sessions	Year 1	Year 5
Swim Team Revenue								
Summer League	$/Swimmer (Average)	$130	$150	20	25	1	$2,600	$3,824
Aquatics Instruction Revenue								
Swim Lessons	8 classes/session	$40	$46	200	255	1	$8,000	$11,766
Water Fitness	$/Session	$6	$7	15	19	10	$900	$1,324
Lifeguard Certification	$/Session	$200	$231	20	25	1	$4,000	$5,883
Rentals								
Birthday Party	$ / 2 HRS of Party Room	$200	$231	12	15	3	$7,200	$10,589
Private (Full Pool)	$/HR	$270	$312	12	15	1	$3,240	$4,765
Area Revenue							**$25,940**	**$38,152**

Expense	Mgmt Assump.	Year 1	Year 5
Program Supplies	4% of year 1 gross revenue; 3% annual increase	$1,038	$1,168
LG Class Materials	$60 per participant for course record fee and manuals	$1,200	$1,528
ARC LTS Facility Fee	1500 cards; ; 3% annual increase	$975	$1,097
Marketing	5% of year 1 gross revenue	$1,297	$1,297
Credit Card Fees	1.5%of Revenue	$389	$572
Part-Time Program Staff	20% of gross	$3,100	$4,559
Area Expense		**$7,999**	**$10,222**
Net Revenue		**$17,941**	**$27,930**

Option 2

Aquatics Programs Revenue & Expenses

Revenue	Mgmt. Assump.	Price Per Session Year 1	Price Per Session Year 5	Total Per Session Year 1	Total Per Session Year 5	No. Sellable Sessions	Year 1	Year 5
Swim Team Revenue								
Summer League	$/Swimmer (Average)	$130	$150	20	25	1	$2,600	$3,824
Aquatics Instruction Revenue								
Swim Lessons	8 classes/session	$40	$46	240	306	1	$9,600	$14,119
Water Fitness	$/Session	$6	$7	20	25	10	$1,200	$1,765
Lifeguard Certification	$/Session	$200	$231	30	38	1	$6,000	$8,825
Rentals								
Birthday Party	$ / 2 HRS of Party Room	$200	$231	20	25	3	$12,000	$17,649
Private (Full Pool)	$/HR	$320	$370	15	19	1	$4,800	$7,060
Area Revenue							**$36,200**	**$53,242**

Expense	Mgmt Assump.	Year 1	Year 5
Program Supplies	4% of year 1 gross revenue; 3% annual increase	$1,448	$1,630
LG Class Materials	$60 per participant for course record fee and manuals	$1,800	$2,292
ARC LTS Facility Fee	1500 cards; ; 3% annual increase	$975	$1,097
Marketing	5% of year 1 gross revenue	$1,810	$1,810
Credit Card Fees	1.5%of Revenue	$543	$799
Part-Time Program Staff	20% of gross	$3,880	$5,707
Area Expense		**$10,456**	**$13,334**
Net Revenue		**$25,744**	**$39,907**

Option 3

Aquatics Programs Revenue & Expenses								
		Price Per Session		Total Per Session		No. Sellable		
Revenue	Mgmt. Assump.	Year 1	Year 5	Year 1	Year 5	Sessions	Year 1	Year 5
Swim Team Revenue								
Summer League	$/Swimmer (Average)	$130	$150	20	25	1	$2,600	$3,824
Aquatics Instruction Revenue								
Swim Lessons	8 classes/session	$40	$46	260	331	1	$10,400	$15,296
Water Fitness	$/Session	$6	$7	30	38	10	$1,800	$2,647
Lifeguard Certification	$/Session	$200	$231	30	38	1	$6,000	$8,825
Rentals								
Birthday Party	$ / 2 HRS of Party Room	$200	$231	30	38	3	$18,000	$26,474
Private (Full Pool)	$/HR	$350	$404	15	19	1	$5,250	$7,722
	Non-capacity growth rate		1.05		1.05			
	Capacity growth rate		1.10		1.00			
Area Revenue							**$44,050**	**$64,787**
Expense	**Mgmt Assump.**						**Year 1**	**Year 5**
Program Supplies	4% of year 1 gross revenue; 3% annual increase						$1,762	$1,983
LG Class Materials	$60 per participant for course record fee and manuals						$1,800	$2,292
ARC LTS Facility Fee	1500 cards; ; 3% annual increase						$975	$1,097
Marketing	5% of year 1 gross revenue						$2,203	$2,203
Credit Card Fees	1.5%of Revenue						$661	$972
Part-Time Program Staff	20% of gross						$4,160	$6,118
Area Expense							**$11,560**	**$14,665**
Net Revenue							**$32,490**	**$50,122**

Green Technologies

The green technologies below can help save water and increase efficiency of the swimming pool

Regenerative Media Filtration

- Can save up to 300,000 gallons annually
- Approximately 10 – 15 year payback

Variable Frequency Drives

- Increases the efficiency of pool pump motors
- $5,000 - $7,000 per year in electricity
- Pay back in 1 year

Solar water heating

- Potential 25% or more savings in water heating costs

Photovoltaic arrays

- 15 – 20 year payback

Pool Covers

- Can reduce heating costs 50 – 70% according to PHTA
- 1 – 2 year payback

Operational Summary

The following projections details the pro forma for the swimming pool, and the recapture rate of operating expenses recouped by revenue. The two options are showing a cost recovery rate for year one in the 51% to 69% range, trending to 55% to 73% by year 5.

Operational Summary					
	2019	2020	2021	2022	2023
Option 1					
Project Cost	$7,390,000				
Attendance	36,962				
Revenue	$143,817	$150,008	$158,052	$163,518	$170,999
Expense	$279,924	$287,251	$294,942	$302,440	$310,376
Operating Cashflow	($136,107)	($137,243)	($136,890)	($138,922)	($139,377)
Recapture Rate	**51%**	**52%**	**54%**	**54%**	**55%**
Capital Replacement Fund	$37,000	$37,000	$37,000	$37,000	$37,000
Cash Flow	($173,107)	($174,243)	($173,890)	($175,922)	($176,377)
Option 2					
Project Cost	$10,350,000				
Attendance	44,354				
Revenue	$224,196	$233,554	$245,501	$253,889	$265,114
Expense	$326,742	$335,344	$344,377	$353,146	$362,455
Operating Cashflow	($102,546)	($101,790)	($98,876)	($99,257)	($97,341)
Recapture Rate	**69%**	**70%**	**71%**	**72%**	**73%**
Capital Replacement Fund	$51,800	$51,800	$51,800	$51,800	$51,800
Cash Flow	($154,346)	($153,590)	($150,676)	($151,057)	($149,141)
Option 3					
Project Cost	$11,230,000				
Attendance	51,746				
Revenue	$263,379	$274,478	$288,726	$298,628	$311,972
Expense	$383,305	$393,343	$403,874	$414,135	$425,002
Operating Cashflow	($119,926)	($118,865)	($115,148)	($115,508)	($113,030)
Recapture Rate	**69%**	**70%**	**71%**	**72%**	**73%**
Capital Replacement Fund	$56,200	$56,200	$56,200	$56,200	$56,200
Cash Flow	($176,126)	($175,065)	($171,348)	($171,708)	($169,230)

APPENDIX A: GENERAL LIMITING CONDITIONS

This study is based on information that was current as of October 2019. Every reasonable effort has been made in order that the data reflects the most timely and current information possible and is believed to be reliable. This study is based on estimates, assumptions, and other information developed by the consultant from independent research.

No warranty or representation is made by the consultant that any of the projected values or results contained in this study will actually be achieved. No responsibility is assumed for inaccuracies in reporting by the client, its agents, and representatives or any other data source used in preparing or presenting this study.

This entire report is qualified and should be considered in light of the above conditions and limitations.

APPENDIX B: FOOTNOTES

1. Centers for Disease Control. Water-Related Injuries: Fact Sheet. Retrieved 3-11-18. https://www.cdc.gov/homeandrecreationalsafety/water-safety/waterinjuries-factsheet.html
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