

Public Works Committee  
**Aquatics Program Assessment**  
Submitted to the Trumbull Town Council  
April 3, 2017

Public Works Committee  
**Aquatics Program Assessment**  
Submitted to the Trumbull Town Council  
April 3, 2017

## **1.0 Introduction**

This assessment was authorized by the Town of Trumbull Town Council November 21, 2016. It is a thorough study of Trumbull's Aquatics Program. This report was prepared by Councilman Mark Block, chairman of the Public Works Committee, in consultation with the committee members: Richard Kascek Jr., William Mecca, Lori Rosasco Schwartz, Jack Testani, Lisa Valenti, Matthew Caron (alternate), and Thomas Whitmoyer (alternate).

The stated scope of the assessment includes by Resolution TC26-81: Be it resolved, the Town of Trumbull shall study the feasibility of expanding its aquatic facilities and make recommendations for improvements to existing pools and/or development of new locations. The report is to be submitted to the Town Council.

## **2.0 Summary of Trumbull Aquatics Program Current Aquatic Facilities, Programming and Operations**

### **2.1 The Trumbull Aquatic Facilities System**

Trumbull's three swimming pools include two outdoor seasonal use only pools (Tashua Pool, Beach Pool), and one year-round indoor use pool (Hillcrest Pool). All three are aging and lacking in specialized aquatic features capable of addressing the long-term specific needs of the town's diverse aquatics community. The outdoor pools are heavily populated during peak periods of use in season. The indoor pool (open year-round) is heavily utilized and subject to scheduling challenges between recreation and competition users. All of the facilities are located in established sections of the town and do not present a challenge in the community's patterns of population distribution and growth. The three current Trumbull Aquatics Program facilities are listed below with their corresponding dates of construction:

### **2.2 Trumbull Municipal Swimming Pools**

(In Order of Year of Construction)

Beach Pool: Built in 1958, this outdoor facility is utilized for seasonal recreational swim programs (May to September). Estimated peak attendance at Beach Pool: 1,000 per day/45,000 per season.

Hillcrest Pool: Built in 1968, as part of Hillcrest Middle School construction. This indoor facility was at one time primarily used as part of the curriculum. Year-round recreational swim programs were later added, though only when school is not in session. Estimated weekly attendance at Hillcrest Pool for open swim: 200 visits/70 individuals.

Tashua Pool: Built in 1972 (estimate), this outdoor facility is used for seasonal recreational swim programs (May to September). Estimated peak attendance at Tashua Pool: 450 per day/10,000 per season.

All of these pools are in the mid-to later stages of their anticipated service life. Given the close proximity of their original construction dates, each is likely to incur ongoing renovation or require significant capital expenditures to ensure safe use at approximately the same time.

Parks and Recreation Department does not currently track individual pool user for open swim.

### **2.3 Trumbull Aquatics Programming**

The Trumbull Aquatics program provides an extraordinary variety of programmed recreational, competitive, fitness, educational, and therapeutic aquatic activities, for individuals, Board of Education sanctioned, and independent organizations. Uses can be broken into the following categories:

- Recreational Use: Open Swim and Lap Swim
- Aquatic Programming: Instruction and Exercise (Including Therapeutic)
- Competitive: High School and Pisces (Independent organization)

### **2.4 Trumbull Aquatics Operations**

The Parks and Recreation Department has no staff dedicated solely to the aquatics program. The overall administration falls under the Parks and Recreation Director. The Recreation Program manager oversees the programming aspects with one part-time recreation supervisor managing the seasonal aquatics programming and lifeguard staff.

Maintenance of the Beach Pool and Tashua Pool falls under the Parks Superintendent. Parks staff includes several individuals qualified to maintain the pool mechanical and chemical systems. During the summer season an individual staff member is assigned to pool maintenance daily (including weekends) to assure proper maintenance and water quality control.

Currently, Beach Pool opens Memorial Day weekend and Tashua Pool opens when the regular school year concludes in June.

Both pools are scheduled to close Labor Day. However, it is not unusual to have Tashua Pool close weekdays in last week of August/first week of September due to lack of available trained staff. Once high school sports programs begin fall practice, it is difficult to maintain proper staff to safely operate both facilities.

The Hillcrest Pool maintenance falls under the Board of Education and daily maintenance of the pool is performed by the school custodial staff.

The Hillcrest Pool is not open for use when school is closed due to weather, vacation, or other events falling under the Board of Education policies for school closure.

### **2.5 Appropriations, Revenues, and Expenditures**

For the most recently completed fiscal year (2015), Beach Pool and Tashua Pool.

Instructional Aquatic Programming (exercise, swim instruction etc.) annual expenditures are estimated at \$35k with corresponding \$35k revenue. Currently there are no revenues generated from "open" or non-instructional swim. Lifeguard staff and supplies expenditures total approximately \$166,000 annually. Maintenance supplies for Beach Pool and Tashua Pool and sprinkler parks total approximately \$54,000 annually.

Hillcrest Pool operating expenses are not tracked independently, but approximate costs are \$155-\$170K for electricity, gas and water; \$15-\$20K for chemicals/treatments/testing; and \$35K for a part-time Certified Pool Operator. The independent Trumbull Pisces swim team program utilizes the Hillcrest Pool

facility; however, the program covers its cost of lifeguard staff and coaches. The program does not generate revenue for the Board of Education or for the Town.

## **2.6 Capital Investments**

The following capital investments have been made to the Town's pools over the last five years:

### **Beach Pool**

- 2016-2017: \$325,000 – Pool liner replacement, pool shell repairs, and additional concrete deck repairs
- 2014-2015: \$90,000 – Pool filter house

### **Tashua Pool**

- 2014: \$75,000 – Slide and deck repairs and electrical repairs
- 2016: \$5,000-7,000 – Restroom upgrade (due to vandalism)

Concessions upgrade 2016 at both facilities. Part of new concession agreement. Concessionaire upgraded in lieu of rent. No direct cost to the Town.

### **Hillcrest Pool**

- 2012: \$375,000 – Replace balance tank, dehumidification system, main drains and lights. Also, abatement of asbestos material. (State grant and some town funds)
- 2012: \$124,000 – Depth markers, painting ceiling, handicap lift, acid and power wash, regrout, new line anchors, new water level controls, recondition filter system, new diving board, starting platforms and anchors, life guard chairs, and converter box repair (Supplemental State grant)

## **3.0 Assessment of Need Based on Four Determinants**

There are four factors which help assess the level of unmet need for aquatic services within the Trumbull community: Present Aquatics Program Demand, Anticipated Future Growth, National Trends in Aquatic Planning, and Public Perceptions of Need. Each of these factors is summarized below.

### **3.1 Present Demand for Aquatic Services**

An assessment of the existing level of aquatics use in the community suggests there is a deficit of indoor aquatic resources. Despite efforts to optimize the use of Trumbull's existing facilities, there remains a need for adequate pool time, and space. This is evidenced by increased competition for programming by various user groups, a perception of facility over-crowding, and unsatisfied requests for expanded service.

At Hillcrest Pool, the Town's sole indoor facility, there are a number of deficiencies and limitations that make co-existence of recreational and competitive swim programs, a challenge. Due to building security/access concerns, only closely-supervised recreational programs are scheduled during school hours.

Recreational swimming at Hillcrest Pool is limited to early bird swim from 6:00 a.m. to 7:00 a.m., or after 7:00 p.m., due to Trumbull High School and Trumbull Pisces programs who occupy the pool between 3:00 p.m. to 7:00 p.m. Based on information provided through this assessment, it is predictable that more adult residents would like to swim, but the early morning or evening schedule makes it more difficult due to the limited hours the pool is available. These programs also operate on an understandably very tight schedule and do not provide sufficient time for transition between programs/users, resulting in over-lap of program time and over-crowding.

The Trumbull Pisces program faces a number of significant issues for their resident-only competitive swim program. Firstly, with more than 150 participants, the Hillcrest six-lane pool is inadequate space for participants to practice in, or compete in. Additionally, the diving board became inoperable and is no longer replaceable within code, thus in affect rendering the diving program unable to utilize the pool. All of the competition meets and events require the team to travel significant distances, at great expense, to adequate facilities.

Trumbull Pisces also indicated the team would like to expand their program to include non-residents, but at this time is unable to handle greater growth due to limited space and capability. It is estimated that expanding to host comprehensive regional swim meets would add a significant burden on parking facilities in the hundreds, as well as, additional maintenance and upkeep of the pool facility.

Differing water and room temperatures create distinct, environmental challenges for competitive and recreational, instructional, and therapeutic swim. Optimal water temperature for instructional, therapeutic and recreational swimming is recommended at 84-90 degrees. Competitive swimming, a more rigorous activity, recommends water temperatures at 78-82 degrees. Water and air temperature plays a significant role in optimal facility conditions; in order to prevent evaporation/condensation, room temperature should be within two degrees of water temperature.

### **3.2 Future Demand for Aquatic Services Prompted by Anticipated Future Growth**

The current demand for aquatic services is based, at least in part, on the present population demographic of the Town of Trumbull. Growth in the diversity of this population's age and changes to its need will precipitate changes in the demand for aquatic services. Swimming is recognized to be a low impact form of exercise to ensure a beneficial workout for lungs, heart and the muscles of the entire body.

Although Trumbull's population is not anticipated to exhibit extensive growth; it is likely there will be a more pronounced diversity in the age of population suggesting the need for expanded facilities with particular emphasis on two user groups: adult recreation swimmers and student-age competitive swimmers.

### **3.3 Changes in the Demand for Aquatic Services Based on National Aquatic Trends**

In the time since much of Trumbull's present aquatic system was built, there has been considerable change in the philosophy, technology, and marketing of aquatic services nationwide. The prevalent trend of contemporary aquatic planning is facilities that are multi-faceted and offer specialized water environments, tailored to the specific needs of: recreational, competitive, fitness, swim instruction, and aquatic users. With proper planning, taking into account community needs, the challenge to doing so is in accommodating all possible users is more challenging, even when economic conditions better prevail in assessing the effect on the municipality capital and operating budgets.

### **3.4 Demand for Aquatic Services and Facilities Based on Public Perception**

Though not an empirical measure, the collective perceptions of Trumbull's citizenry – aquatic and non-aquatic users alike – offer important qualitative insights into the performance of the town's Aquatics Program. For the purposes of this study, assessments have been gathered through the course of committee meetings and facilitated public forum.

The citizens of Trumbull who have participated in this study's public comment process overwhelmingly indicate a need for more aquatic facilities with additional features and amenities that better address their specific aquatic needs. They prefer facilities which are more accessible and dedicated to their specific user group. They believe dedicated indoor competitive facilities should be provided that are

separate from indoor or outdoor recreation facilities. Recreation users would like the provision of more “patron friendly” amenities, while competition users would like more “up-to-date and dedicated quality” facilities. They would like the needs of the Trumbull Aquatics program to be addressed in a manner which is proportionate to the town’s commitment to other Board of Education and Parks and Recreation services.

#### **4.0 Approaches for Addressing Aquatic Need**

##### **4.1 Experience of Other Peer Communities in Addressing Aquatic Needs**

In terms of aquatic services, the example of peer communities is mixed, both nationwide and within Trumbull’s geographic region. Some communities are extremely generous in the provision of aquatic facilities. Others are less so. In comparison to both national trends and regional peers, Trumbull is about average in terms of its per capita provision of aquatics facilities and programming.

##### **4.2 How Non-Municipal Aquatic Providers Address Aquatic Needs**

A number of non-municipal aquatic providers play a significant role in meeting the community’s desire for more upgraded and spacious aquatic facilities. Some of these providers – notably faith-based organizations and nearby municipalities – address a demographic base somewhat comparable to that of Trumbull, while others, including private non-public facilities support more affluent or specialized aquatic users. Regardless, there remain areas of the region which do not have sufficient aquatic facilities of a scale necessary to support the needs of their population.

##### **4.3 “Money is No Object” Approach to Addressing Trumbull’s Aquatics Needs**

Both the needs of Trumbull’s aquatics community and national trends of contemporary aquatic design suggest that an entirely new manner of pool design is desired for the future of the Trumbull Aquatics program. This model can be best characterized as a new indoor aquatic center that offers a variety of “bundled” swimming environments suited to the various needs of swimming constituencies within a single or multipurpose venue.

The “money is no object” approach features hypothetical elements fashioned in a range of sizes. In addition, each element is designed to change, adapt, and grow as future needs of the community become evident over time. The inherent scalability ensures that planning decisions made in the present can remain flexible and responsive to changing community needs in the future.

This is a direct outgrowth of the recognition that specific aquatic user groups have very specific and distinct aquatic facility needs. Today’s aquatic facilities are conceived as multi-purposed, multi-generational aquatic centers in which the specific needs of each aquatic user group – recreation, competition, fitness, instructional, and therapy – can be appropriately addressed at every scale of facility.

The model of bundling aquatics recognizes the inherent advantage of economics of scale. Under the right circumstances, facilities that “bundle” a variety of pool types can share common infrastructures and support amenities, thereby preserving capital resources.

Bundling also recognizes both the need and the utility of providing aquatic services with a variety of approaches whose capital costs represent a broad range of fiscal options. This idea of balance is particularly significant in decisions regarding how extensive aquatic facilities should be built as indoor venues.

Indoor pools and outdoor pools often serve very different functions in many communities, especially those in more variable or seasonal weather locations. Indoor pools tend to be programmed with competitions, classes, fitness, and instruction. Outdoor pools tend to be used more for seasonal recreation. Outdoor pools have high recreation and entertainment features, whereas indoor pools offer year-round swimming in a more concentrated interior setting.

## **5.0 Plan of Service**

The committee's recommended long-range Plan of Service for the Trumbull Aquatics program builds on all of the information developed in this and earlier reports and translates these many factors into a concrete, fully realizable blueprint for the future development of the community's aquatic facilities and programming. The committee's Plan of Service takes into account the following primary needs and offers a corresponding response.

### **5.1 Primary Needs**

The strategy recognizes that there is significant unmet need within the present, affected user groups of Trumbull's Aquatics program. As use continues to grow, the magnitude of this unmet need will increase. The committee's Plan of Service proposes that this need be addressed through a phased campaign of upgrades, renovations, and additions to Trumbull's existing aquatic facilities. Given the present age of many of these facilities, the committee's Plan of Service further anticipates that one or more of these pools will require significant rehabilitation and expansion in the future.

Parking availability is two-fold. Extensive parking is required for a competition pool to allow for adequate availability to those who attend meets. This number can be extensive in relation to the parking necessity required for a recreation pool. Appropriate parking studies would be required to fully realize the number of parking spaces each pool would require.

Fundamental in this response to need is an underlying but essential principle that: unmet need must be addressed equitably across all segments of the community. It is therefore critically important that the committee's Plan of Service recommendation of implementation of both renovation and new construction projects be valued in parallel fashion.

### **5.2 Secondary Needs**

The assessment also identifies a series of secondary factors important in addressing additional elements of aquatic need in the community. These needs and the committees corresponding Plan of Service response are listed below.

- Trumbull's present aquatic facilities are aged, with the Hillcrest Pool requiring more attention due to the extensive use it receives as a year-round facility. The level of pool conditions is not individually addressed and do not all adequately speak to the specific facility needs required by the various categories of aquatic users. The committee's Plan of Service proposes that this need be addressed by incorporating user-specific aquatic features in all renovations and new construction.
- Under ideal fiscal scenarios, the financial analysis demonstrates that larger facilities generate higher recapture rates and are a more efficient use of operating expenditures than smaller facilities. Further, large, bundled aquatic facilities conserve capital resources due to their inherent economies of scale, limiting site development and infrastructure costs. The committee's Plan of Service recognizes the benefits of larger, multi-purpose facilities over smaller single-use facilities. It is, however, important to consider who the primary users of the facility will be, and their proximity to the facility.

- Overall site size often dictates bundled aquatic facilities. Appropriate square footage to accommodate multiple pools for recreation, competition, toddler and therapeutic are constrained by requirements for deck space, lane width, diving height and all manner of requirements for true competition and appropriate recreation. Parking needs must also be properly met to ensure adequate allowance is made for multiple facility use during peak hours for recreation and meets, as well as other activities occurring concurrently on site.

### **5.3 Strategy of Service Response**

There are both pros and cons to the good quality value of constructing a significant new indoor aquatic center. However, based on the ability to design and designate separate competitive and recreation aquatic facilities, the committee suggests a compromise, offering a balance of new recreation-oriented indoor facilities, while in the short-term, enhancing the current competition/recreation facility to a single competition only one.

- The assessment recognizes that the quality of aquatic amenities presently available in Trumbull pools could offer even greater value for patrons. The assessment further argues that better and more user-specific amenities will command enhanced revenues and improve recapture rates, lessening the need for public subsidy.
- The assessment recognizes that the public's perception of aquatic facilities is favorably enhanced by the incorporation of relatively modest, patron-friendly amenities. The committee's Plan of Service responds by proposing that all renovations and any new construction include such amenities to enhance patron satisfaction.
- Of equal importance, the committee's Plan of Service supports Trumbull Aquatics' mission of providing affordable access to aquatic facilities for all segments of its citizenry. Accordingly, a recommended fee-for-services structure should be tailored to strike a careful balance between securing reasonable compensation for enhanced amenities while preserving the Aquatics Program's tradition of affordability. A study of nearby municipal indoor aquatic facilities revealed that most require a membership or permit charge for use of the pool, and are available to both resident and non-resident patrons. Municipalities such as Orange, Shelton, Ridgefield, Weston, and Westport, all offer family membership packages ranging from \$140 to \$240 per family per year. Individual adult and senior packages range from \$80 to \$125 per year.

### **5.4 Contingency Planning**

The review of the Aquatics Program's present status suggests a greater emphasis on contingency planning. Although the Town has an exceptional record of maintaining years of uninterrupted aquatic service, the advancing age of the present facilities suggests the need for scrutiny and preventative maintenance in the future. In response, the committee's Plan of Service proposes the implementation of long-term contingency planning that would ensure the availability of adequate and timely funding of future facility upgrades.

The assessment recognizes that the present systems of management and personnel available to the Aquatics program are adequate for the work it must perform. The committee's Plan of Service concludes with a series of additional recommendations including those for new construction, partnering, renovations, new construction, and alternative sources of funding.

## **6.0 Physical Plan of Service**

### **6.1 Phased Approach to Concurrent Construction and Renovation**

Recommendations are listed in order of probable cost.

- Construction of a new indoor recreation pool. This would be most feasible if incorporated into Community Center design.
- Limited renovation of Hillcrest Pool, with designated use for student and competitive swim programs.
- Maintenance Schedule of Tashua Pool and Beach Pool.

### **6.2 Opinion of Financial Performance**

The following summarizes an opinion of the financial projection that should be performed for any and all indoor pool facilities. An accurate financial performance appraisal for the proposed Physical Plan of Service would be beneficial when planning and budgeting occurs. All values should be adjusted based on an anticipated rate of inflation calculated at the midpoint of each phase. Operating costs for existing Trumbull Aquatics program facilities should be included as well, with notation being made that at the present time there is no charge to residents for use of the Towns outdoor seasonal pools.

#### **Opinion of Financial Performance – New Recreation Pool**

Total Phase Cost:

Attendance:

Revenue:

Expense:

Recapture Rate:

Subsidy:

#### **Opinion of Financial Performance – Limited Hillcrest Pool Renovation**

Total Phase Cost:

Attendance:

Revenue:

Expense:

Recapture Rate:

#### **Opinion of Financial Performance – New Hillcrest Competition Swim Center**

Total Phase Cost:

Attendance:

Revenue:

Expense:

Recapture Rate:

#### **Opinion of Financial Performance – New Indoor Competition and Recreation Indoor Swim Center**

Total Phase Cost:

Attendance:

Revenue:

Expense:

Recapture Rate:

## **7.0 Recommendations**

The following recommendations are made based on the complete aquatic assessment conducted by the committee. These recommendations are such that they address the community needs, provide for aquatic users, and deliberately look to the future in meeting the aquatic needs of the Town.

### **7.1 Recreation Pool**

The committee proposes a recreation pool to be included as part of a community center project being studied by the Community Center Building and Study Committee.

- A separate community recreation pool is only recommended if the community center project proceeds.
- Should a community center project not proceed, and no viable alternative for a recreation pool exist at the present time, the committee proposes to continue the joint recreation/competition arrangement currently in place at Hillcrest Pool.
- Should it not be financially feasible to include a recreation pool for all other non-competitive uses by the community, the committee recommends exploration of a community-partnered indoor aquatics center.

### **7.2 Renovation of Hillcrest Pool**

Refurbish to the extent financially feasible, and dependent on the recommendations of 7.1 Recreation Pool, Hillcrest Pool for use as the Town's competition pool to be used by Trumbull High School swim teams, Pisces community swim team, and other competition-centric users.

- Hillcrest Pool should remain under the auspices of the Board of Education.

### **7.3 Reconstruction of Competition Pool**

Propose reconstruction of the Hillcrest Middle School property pool for sole use as a community competition pool, dependent on the recommendations of 7.1 Recreation Pool.

### **7.4 Community Partnership**

The committee proposes to continue to study the feasibility of partnering with Trumbull Lakewood YMCA on an indoor aquatics center to encompass all competition swimming and diving.

### **7.5 Availability of Outdoor Pools**

Recommend that both Tashua Pool and Beach Pool remain open and fully staffed through Labor Day. (Get information from P&R on staffing and opening details, utilization)

## **7.6 Alternative Funding**

Seek alternative funding opportunities through private businesses with Trumbull connections or affiliations.

## **8.0 Summary Conclusions**

If the Strategy plan as outlined above is implemented, Trumbull will average one pool facility for every 8,000 residents, an improvement over its present rate of one pool for every 10,666 residents. This value will standardize Trumbull in the national average as defined assuming all other like size municipalities grow their own systems in a comparable fashion.

The Trumbull Aquatics Program will be far more responsive to the needs of individual aquatic user groups because both the system's existing pools and its new facilities will be designed with far greater specialization. The needs of recreational, competitive, fitness, instructional, and therapeutic aquatic users will be far better addressed than is possible with the Town's current aquatic facilities.

The committee's Plan of Service recommends that the underlying service philosophy of the Trumbull Aquatics Program – to deliver quality aquatic experiences and education at an affordable user cost be preserved. Accordingly, the assessment projects a continued need for annual Town of Trumbull funding appropriations.

The overall average age of the system's facilities will decrease as a new pool and renovated existing facilities are brought on board, potentially lowering annual maintenance expenditures.

Recommendations to broaden the capital funding base for the Aquatics Program, including the use of joint public-private partnerships and/or private equity rights could assist in the procurement of some proportion of the capital funding necessary for improvements to the Town's aquatic system.

## **Trumbull Aquatic Facilities Study**

Appendix Contents

# Hillcrest Pool Use

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Program	Program	Program	Program	Program	Program	Program
	Attendance	Attendance	Attendance	Attendance	Attendance	Attendance	Attendance
6:00 AM	Early Bird	15	15	15	15		
6:15 AM	Early Bird	15	15	15	15		
6:45 AM	Early Bird	15	15	15	15		
7:00 AM	Early Bird	15	15	15	15		
7:15 AM	Early Bird	15	15	15	15		
7:30 AM	Early Bird	15	15	15	15		
7:45 AM	Early Bird	15	15	15	15		
8:00 AM	Early Bird	15	15	15	15		
8:15 AM	Early Bird	15	15	15	15		
8:30 AM	Early Bird	15	15	15	15		
8:45 AM	Early Bird	15	15	15	15		
9:00 AM	Mom Tot	10					
9:15 AM	Mom Tot	10					
9:30 AM	Mom Tot	10	Adult Lessons	4			
9:45 AM	Aerobics	20	Aerobics	20			
10:00 AM	Aerobics	20	Aerobics	20			
10:15 AM	Aerobics	20	Aerobics	20			
10:30 AM	Aerobics	20	Aerobics	20			
10:45 AM	Lap Swim	10	Lap Swim	10			
11:00 AM	Lap Swim	10	Lap Swim	10			
11:15 AM	Lap Swim	10	Lap Swim	10			
11:30 AM	Lap Swim	10	Lap Swim	10			
11:45 AM	Water Fitne	20	Water Fitness	20			
12:00 PM	Water Fitne	20	Water Fitness	20			
12:15 PM	Water Fitne	20	Water Fitness	20			
12:30 PM	Water Fitne	20	Water Fitness	20			
12:45 PM	Water Fitne	20	Water Fitness	20			
1:00 PM	THS SWIMMING						
1:15 PM	THS SWIMMING						
1:30 PM	THS SWIMMING						
1:45 PM	THS SWIMMING						
2:00 PM	THS SWIMMING						
2:15 PM	THS SWIMMING						
2:30 PM	THS SWIMMING						
2:45 PM	THS SWIMMING						
3:00 PM	THS SWIMMING						
3:15 PM	THS SWIMMING						
3:30 PM	THS SWIMMING						
3:45 PM	THS SWIMMING						
4:00 PM	THS SWIMMING						
4:15 PM	THS SWIMMING						
4:30 PM	THS SWIMMING						
4:45 PM	THS SWIMMING						
5:00 PM	PISCES SWIMMING CLUB						
5:15 PM	PISCES SWIMMING CLUB						
5:30 PM	PISCES SWIMMING CLUB						
5:45 PM	PISCES SWIMMING CLUB						
6:00 PM	PISCES SWIMMING CLUB						
6:15 PM	PISCES SWIMMING CLUB						
6:30 PM	PISCES SWIMMING CLUB						
6:45 PM	PISCES SWIMMING CLUB						
7:00 PM	Water Fitne	20	Water Fitness	20	Family Swim	35	
7:15 PM	Water Fitne	20	Water Fitness	20	Family Swim	35	
7:30 PM	Water Fitne	20	Water Fitness	20	Family Swim	35	
7:45 PM	Water Fitne	20	Water Fitness	20	Family Swim	35	
8:00 PM	Lap Swim	15	Lap Swim	15			
8:15 PM	Lap Swim	15	Lap Swim	15			
8:30 PM	Lap Swim	15	Lap Swim	15			
8:45 PM	Lap Swim	15	Lap Swim	15			
9:00 PM	Lap Swim	15	Lap Swim	15			
9:15 AM	Lap Swim	15	Lap Swim	15			

Recreation  
Piscis  
Trumbull HS

As requested I have quickly researched some costs that will be associated with the swimming pool. Of course there are a lot of assumptions that have to be made to arrive at these numbers. Efficiency of the building envelope that houses the pool, efficiency of the equipment (heating, dehumidification, pumps, use of chlorine, hours of operation, etc)

In researching these numbers there have been a lot of new technologies and strategies for operating pools and reducing operational cost. The numbers I am giving I believe to be achievable based on information obtained on websites such as USA Swimming and Desert Aire. No engineer will calculate or guess at heat load until the building is designed.

The following costs are arrived with many assumptions;

- Utility costs for Natatorium (Electric, Gas and Water) \$155K-\$170K
- Chemicals (Chlorine, testing, PH, Alkalinity, etc) \$15K-\$20K
- Certified Pool Operator/Custodial (Pool testing and chemical adjustments, Locker Room and pool area cleaning etc) \$30K-\$35K

Not included:

- Life guard costs
- Grounds Maintenance
- Exterior Building Maintenance

Mark J. Deming  
Director, Facilities  
Trumbull Board of Education

# United States Water Fitness Association

"The Central Aquatics Information Resource"

"The health and safety of our participants, including our instructors, is our top priority."

- John Sparnuth USWFA President/CEO

-->



## Suggested Swimming Pool Temperatures

This is a debatable subject! The suggested pool temperature is usually dependant on the person's activity in the pool. Below are some ideas regarding water temperatures for various activities.

- HOME
- ABOUT US
- NATIONAL CERTIFICATION COURSES
- MEMBERSHIP
- RENEWALS
- HOST A COURSE
- AWARDS PROGRAM
- AQUATIC PROGRAMMING INFORMATION
- NATIONAL AQUATIC NEWSLETTER
- OTHER AQUATICS INFORMATION
- INTERNSHIPS
- CONTACT US
- LINKS

**Highly Competitive Swimming Teams:** 78 to 80 degrees

**Swimming Lessons (beginners)**

Preschool:	88 to 94 degrees
3 - 5 years:	86 to 90 degrees
6 - 13 years:	84 to 86 degrees
Adults:	85 to 89 degrees

**Water Fitness**

Arthritis:	83+ degrees (83 degrees is a minimum)
Prenatal:	84+ degrees
Aqua Aerobics:	78 to 82 degrees
Water Walking:	The older the person, the higher they like the water temperature (up to a certain point).

**Special Note:** Because of varying water temperatures, and for the safety of participants, classes should vary depending on the water temperature. High aerobic activity in high temperature water can be dangerous.

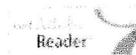
It's important to remember that you can never keep everybody happy regarding water temperature. If a pool is used for just one of the above-mentioned programs, you do not have a problem. However, if your pool is used for a variety of aquatic programs, you have what we call a "multi-purpose" pool. The water temperature at the average indoor multi-purpose pool in the USA is 84 to 86 degrees.

---

[Home](#) | [USWFA Info](#) | [National Certification Courses](#) | [Membership](#) | [Renewals](#) | [Host a Course](#)  
[Awards Program](#) | [Aquatic Programming Information](#) | [National Aquatic Newsletter](#) | [Other Aquatics Information](#) | [Contact Us](#) | [Links](#)

---

Many of our Forms and Publications available on this website are in PDF format. If you have problems viewing these files please visit the Adobe website to download the free Acrobat Reader:





Q. I am trying to find a safe and comfortable air temperature for my indoor pool – can you provide information to assist?

A. There are so many variables concerning the air temperature and humidity levels in an indoor pool, that *Aquatic Exercise Association* (AEA) does not list a specific recommendation.

The following information is backed by experience, anecdotal evidence and research data from Desert Aire (the largest HVAC manufacturers for pool room heat and dehumidification).

Decades ago when most pools were 4-lane, 20-yard tanks in the basement of brick buildings, someone came up with the observation that the air was easier to breath when the water and air temperature were within a couple of degrees of each other. From such common sense observation, parameters were developed. This was when boilers heated most indoor pools and the water temp was always around 84 degrees. The air handling systems were usually steam (hot water) and there was really no such thing as dehumidification. So bringing steam heat into a room with the thermostat set at 74 degrees F (23 C) was no problem. There was no draft and by the time the air contacted the warmer water, the room temp leveled out about 78 degrees F (25.5 C).

Now we are in the age of forced-air gas or electric heat and steel buildings rather than brick and mortar. The steel is susceptible to corrosion caused by moisture and the air has to be dehumidified. It's a new ball game but some are still trying to play by the old rules. We would like to give you a formula, but the systems vary much as the air duct configuration. Remember, even warm air blowing across a wet body can be uncomfortable. So we have come full circle to using common sense supported by pages of formulas and calculations.

So here is where we are:

- Room size: the larger the room the harder it is to find a comfortable air to water temperature balance.
  - Pool size (surface area): the more surface area the more the water will heat the air and add humidity.
  - Pool agitation and bather load: the more jets and bubblers and the more people splashing, the more interaction between air and water.
  - Chemical treatment of the water: the type and brand of chemicals greatly affects air and water quality. There are very solid opinions as to what type of disinfection system is best, but that is not the subject of this article.
  - Type and size of filter: the more efficient the water filtration the better the air quality.
  - Type and brand of Heating Ventilating Air Conditioning (HVAC) system and dehumidification system: systems vary.
  - Pool patrons: the age and abilities of clients as well as the type of programming will influence how the temperature is perceived and accepted (e.g. high intensity exercise & therapy/rehab; children or seniors & active young adults, competitive swim teams, etc.)
- These variables explain why there is no set formula to calculate air temperature for an indoor pool.

Some other related situations:

Almost every pool area is designed to have a negative pressure. That means there is more air being exhausted than is being brought in. If there is a steam room or sauna adjacent to the pool room, every time someone opens the door of the steam room or sauna, hot moist air immediately is being drawn into the pool room. This causes the perception of "heavy air": it is humid and warm.

Fresh humid air should not be harmful except to people with acute respiratory problems. The problem comes from the pool evaporation if the water is not balanced properly. When that happens, Chloramines are released in the air resulting in potential health risks, such as "Lifeguard (or Coaches) Lung". This problem is common across the country and has a few solutions, one being an Ultra Violet pool water treatment system. There is an easy water test to check for this. The test is called the "free and available chlorine comparison".

Here is the bottom line. You are correct in being concerned about water and air quality and temperature. If your water is 83-86 F (28-30 C), keep the air at 78-80 F (25.5 – 26 C) and try to keep drafts off of clients in the pool. Have the HVAC filters checked every 3 months and check water chemistry twice a day.

### **Water Temperature**

Water varying from 83-86 degrees Fahrenheit (28-30 degrees Celsius) is the most comfortable temperature for typical water fitness classes and general aquatic programming. This allows the body to react and respond normally to the onset of exercise and the accompanying increase in body temperature. Cooling benefits are still felt and there is little risk of overheating. Program modifications will be required for water temperature outside the recommended range. Aquatic Fitness Professionals should know the water temperature and modify the program accordingly based upon the population and the program format.

Water temperature below the recommended range requires modifications in programming. The primary focus of the warm-up should be large, lower impact, rhythmic movements that gradually elevate core temperature of the body and should last for at least 9-15 minutes. The main segment must be of adequate intensity to maintain proper body temperature and prevent injury. Participants may find it necessary to wear specialized clothing to maintain body heat. The cool down and post-stretch must be adjusted, in overall length as well as activity, according to the environmental conditions. Water temperature above the recommended range also requires modifications in programming. The intensity and length of the main segment should be adjusted to prevent overheating. Encourage proper hydration and apparel (e.g. avoid swimming caps that prevent heat dissipation). An extended cool down with emphasis on stretching and relaxation is appropriate.

Specialized populations may require specific water temperatures for safe and effective programming. Some general guidelines are as follows:

### **Swim Team & Lap Swim**

78 – 82 F = 25.5 – 27.5 C

Slightly warmer may be workable

### **Resistance Training**

83 – 86 F = 28 – 30 C

### **Therapy & Rehab**

91 – 95 F = 33 – 35 C

Can be as low as 87 F for many types of therapy

### Multiple Sclerosis

80 – 84 F = 26.5 – 29 C

Warmer water can cause adverse affects

### Pregnancy

78 – 84F = 25.5 – 29 C

Warmer water can cause adverse affects

### Arthritis

84 – 88 F = 29 – 31 C

86 – 90 F = 28 – 32 C

Arthritis Foundation minimum  
ATRI low function program

### Fibromyalgia

86 – 96 F = 30 – 35.5 C

ATRI

### Aerobic activity

84 – 88 F = 29 – 31 C

Arthritis Foundation

### Older adults - vertical

83 – 86 F = 28 – 30 C

86 – 88 F = 30 – 31 C

Moderate to high intensity  
Low intensity

### Children, fitness

83 – 86 F = 28 – 30 C

### Children's swim lessons

$$82+ F = 27.5+ C$$

Varies with age and class length

### Obese

$$80 - 86 F = 26.5 - 30 C$$

### Water Depth

Shallow water programs are typically performed in water that ranges from mid-rib cage to mid-chest in depth. This provides the benefits of reduced impact while still maintaining proper alignment and control of movement and allows for activities that sufficiently train all the major muscle groups against the water's resistance. Specific programming options may require variations in water depth. Water that is below waist-depth will require that impact levels be modified to prevent musculoskeletal injury. This water depth will also reduce the water's cooling ability during sustained exercise so intensity should be carefully monitored.

Pools with a depth range of 3.5 - 4.5 feet (1.07 - 1.37 meters) seem to be the most useful for typical shallow water fitness classes; pools with a depth of 3-5 feet (0.91 - 1.52 meters) will accommodate nearly all heights of participants. A gradual slope of the pool bottom is preferred to accommodate varying heights of participants. A steep slope may lead to musculoskeletal stress. 4' deep is the most versatile programmable depth.

Deep water exercise is most successful at a depth where a body can be suspended vertically and is free to move in any direction and speed, without experiencing impact or weight bearing stress. A pool depth of 6.7 feet (2 meters) or more provides the ideal environment for a deep water class. In some situations, either due to the pool slope / depth or the height of the participant, it is necessary to perform a modified deep water workout.

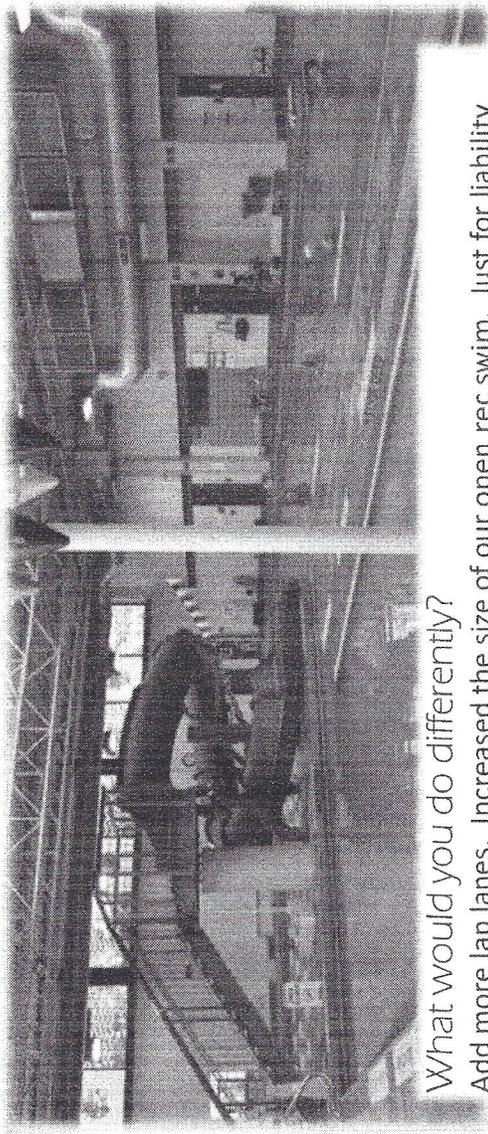
A modified deep format would incorporate flotation equipment but movement adaptation would be necessary as compared to typical deep water training. For example, full range of motion cross country skis would be modified to prevent striking the feet on the bottom of the pool.

### Pool Entry & Exit

Many pools have ramps, walk-in access, chair lifts or shallow water areas where participants can enter and exit the water. However some pools still require the use of steps and ladders and this may restrict the participants that can be accommodated. Some individuals may require assistance where as others may not be able to enter/exit the pool via a ladder. All steps and ladders should be secure, slip resistant, and have safety hand rails. When designing NEW pool facilities it is imperative to consider safe entry and exit options for all abilities.

### Air Quality

Air quality for indoor pool facilities should be monitored according to the Country, State and Local Health Department Guidelines. Adequate ventilation is critical to maintain proper humidity and remove chemical fumes from the pool area. Humidity level and air circulation will also influence the comfort level of the participant and thus requires constant monitoring. Always remember: Air quality is totally dependent on water quality.



**What would you do differently?**

Add more lap lanes. Increased the size of our open rec swim. Just for liability issues, very glad we do not have a diving board. We have buckets that drop water on the children in our zero entry, which the kids love. We also have a slide, great for birthday parties but it does take up a lot of room. Personally, I wouldn't purchase a slide again. It would be ideal to have a separate pool for lap swimmers because if a child had an accident in the pool, we wouldn't have to close down the lap swimming

Total Pool Area: (appx. 6,000 s.f. surface area)

Water Temp: 82-83 Air Temp: 87-88

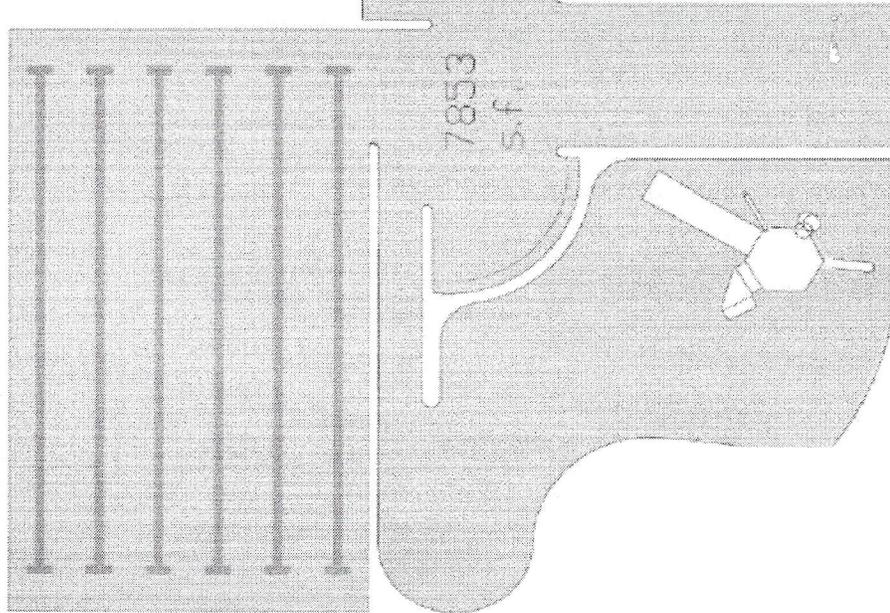
Lap Swimming:

- (5) Lap Lanes @ 25 yards; or
- (4) Lap Lanes @ 25m

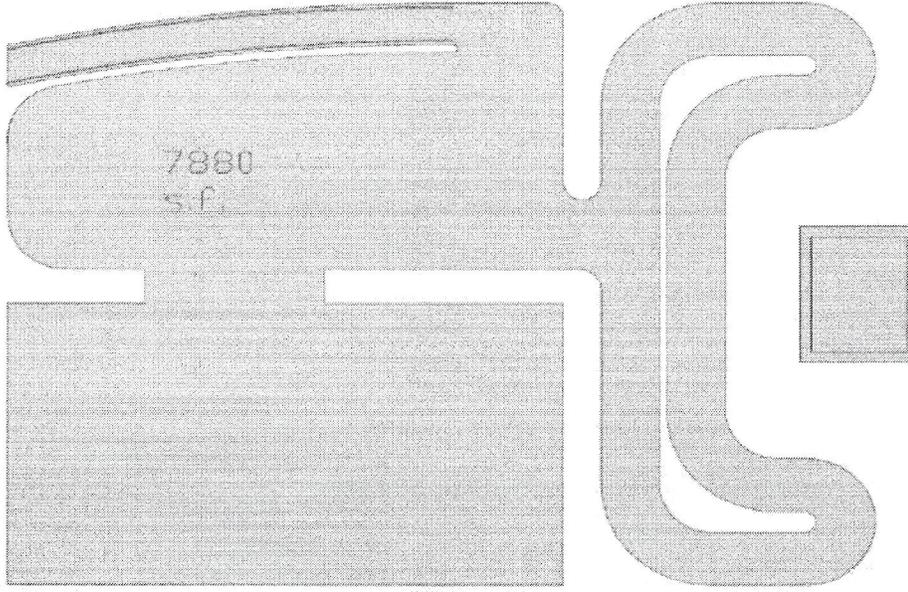
Occupancy:

- Code: appx 240
- Functional: 50-60

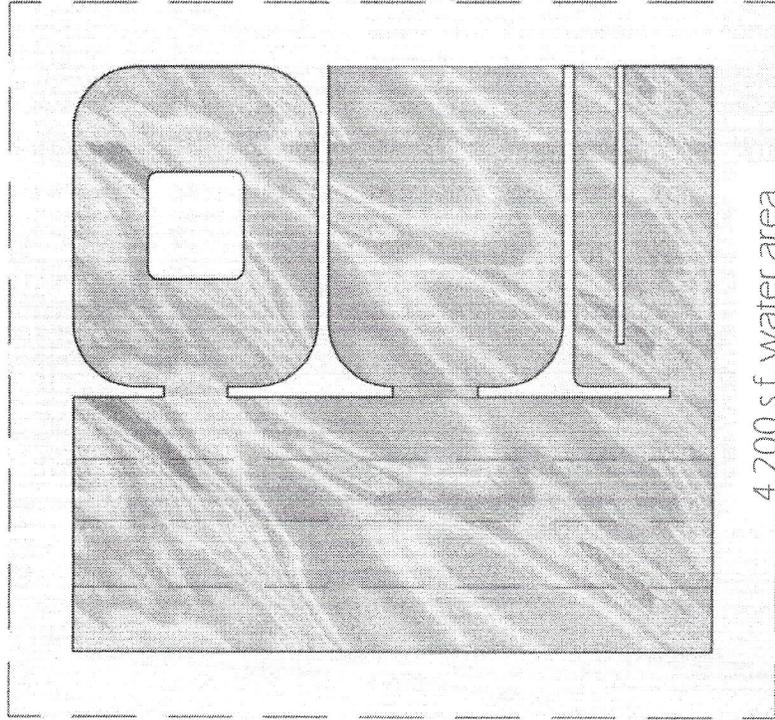




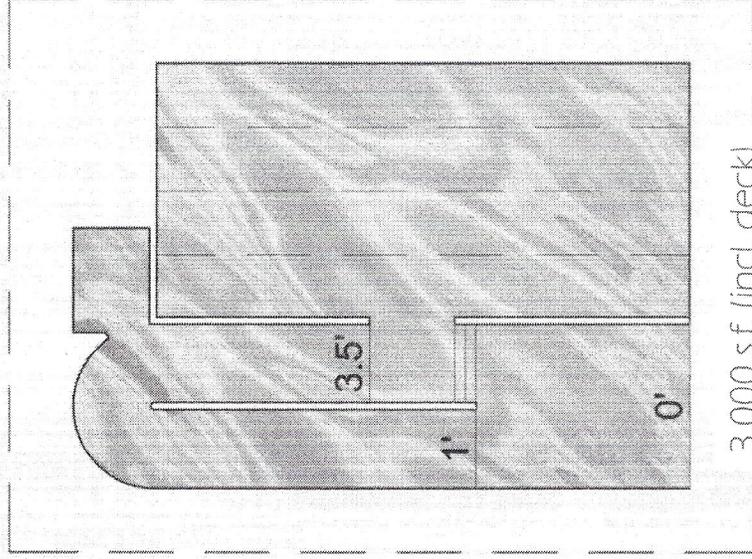
- 6 Lane Lap Pool
- Zero-depth entry w/ spray structure and features
- Learn to swim/activity Area
- Seating Areas
- Lazy River



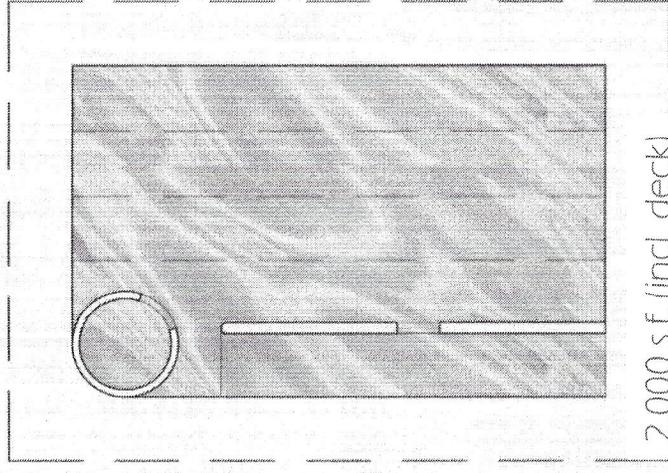
- 6 Lane Lap Pool
- ADA Ramp
- Learn to swim/activity Area
- Seating Areas
- Lazy River
- Separate Toddler Pool



- 4,200 s.f. water area
- 4L x 54' Laps
- Beach/Toddler Entry
- ADA Ramp
- Therapy Area
- Recreation Area



- 3,000 s.f. (incl. deck)
- 4L x 50' Laps
- Beach Entry
- ADA Ramp
- Therapy Area



- 2,000 s.f. (incl. deck)
- 3L x 50' Laps
- ADA Ramp
- Therapy Area

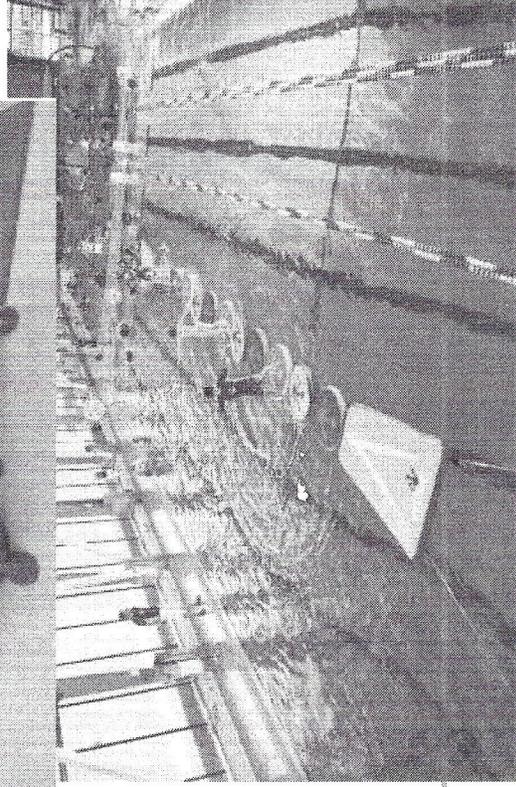
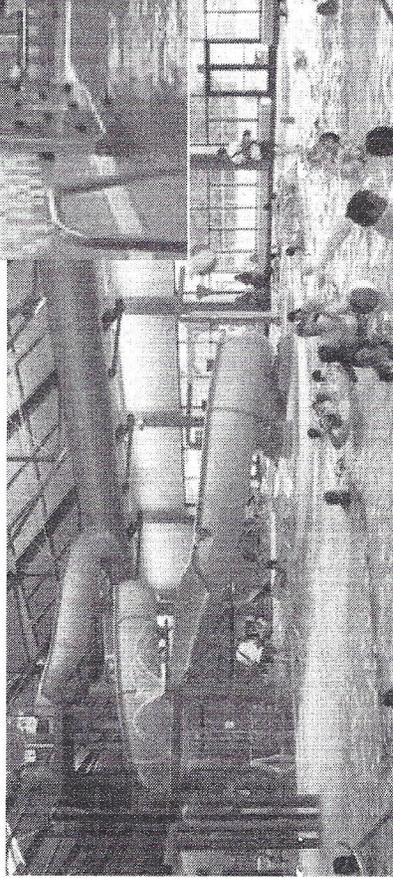
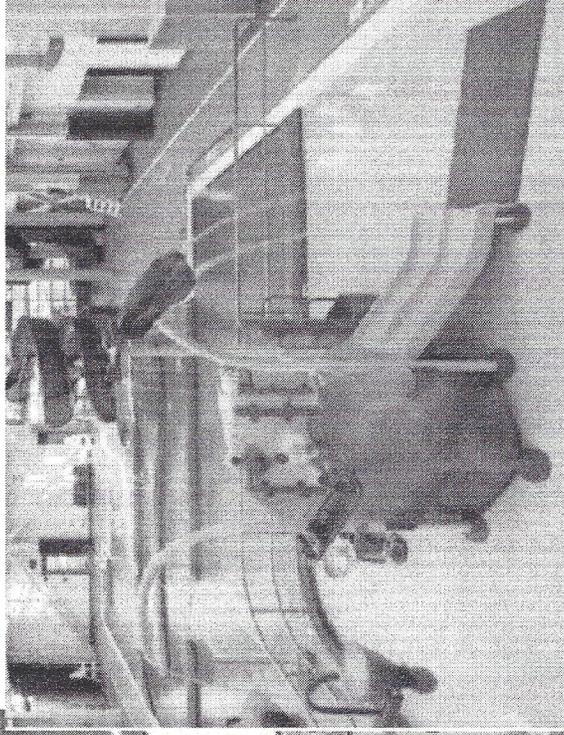
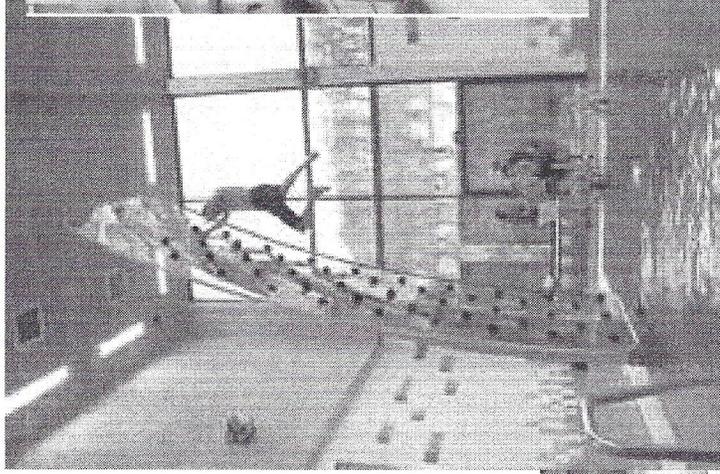
## Recreational Pool – Options

- Separate Pools
  - Toddler areas run the risk of being shut-down more often, some centers have chosen to provide a separate, shallow toddler area to allow the main pool to stay open, whereas a single pool would need to be closed for 2 or 24 hours depending on the type of incident.
    - Ridgefield Pool shuts down appx. 6-10 times per year
  - Recreational Swimmers: Children, Teens, etc. may be loud and rambunctious to the point of irritation for athletic/fitness swimmers. Some centers have opted to split-off a small lap pool/area to mitigate this concern. It also provides opportunities for varied programming
- Separate Pools require separate filtration systems and added deck space between them.
  - This results in a larger building footprint, and higher relative cost.
- Separate pools also allow for different water temperatures
  - Fitness/athletic swimmers will want cooler temps than recreational swimmers.

## Recreational Pool – Considerations

- Recreational Amenities

- Climbing walls,
- Playscapes
- Water slides
- Wibits



Recreational Pool – Considerations