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ABSTRACT

The state of Alaska, which provides for swimming pools as an eligible project cost in projects approved for state aid, presents guidelines to assist school districts in planning swimming pools, and provides standards for swimming pool size based on the planned educational program and student population. The guidelines are intended to assist school districts in determining what portion of a swimming pool's space is eligible for state funding as determined by the Commissioner, and the factors in determining pool size. Included with the pool size recommendations are a chart summarizing standard pool sizes, the method for determining allowable pool size and a worksheet, and a conceptual layout of a swimming facility. (GR)

Alaska Department of Education

Swimming Pool Guidelines

State of Alaska - Department of Education
Education Support Services / Facilities

1997 Edition

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Table of Contents

Introduction

These guidelines have been developed to give assistance and direction to Alaska school districts in planning swimming pools. They are based upon AS 14.11.013(d) and 14.11.100 (h), which provides for swimming pools as an eligible project cost in projects approved for state aid under AS 14.11. This eligibility is first subject to limitations in general space eligibility established under 4 AAC 31.020. Secondly, this guideline implements standards for swimming pool size based on the planned educational program and student population. Thus, these guidelines are intended to help Alaska school districts determine what portion of swimming pool space is eligible for State funding as determined by the commissioner.

Authority

Statutory Requirements

A.S. 14.11.100, (h).

"An allocation under (a) (4) or (5) of this section for school construction begun after July 1, 1982, shall be reduced by the amount of money used for the construction of residential space, hockey rinks, planetariums, saunas, and other facilities for single purpose sporting or recreational uses that are not suitable for other activities and by the money used for construction that exceeds the amount needed for construction of a facility of efficient design as determined by the department. An allocation under (a) (4) or (5) of this section may not be reduced by the amount of money used for construction of a small swimming pool, tank, or water storage facility used for water sports. However,***an allocation shall be reduced by the difference between the amount of money used to construct a swimming pool that exceeds the standards adopted by the department and the amount of money that would have been used to construct a small swimming pool,*** * tank, or water storage facility, as determined by the commissioner."

* *emphasis added*

Department of Education Review

AS 14.07.020(a)(11)

The department shall "review plans for construction of new public elementary and secondary schools and for additions to and major renovations of existing public elementary and secondary schools and, in accordance with regulations adopted by the department, determine and approve the extend of eligibility for state aid of a school construction or major maintenance project; for the purposes of this paragraph, "plans" include educational specifications, schematic designs and final contract documents;"

Plans for a swimming pool are to be submitted to the Facilities section of the Alaska Department of Education as part of the standard review documents required by statute and regulation. At the educational specifications stage, plans must contain, 1) a detailed description of the planned pool program with anticipated uses and 2) detailed information about numbers of students to be involved in the various programs and 3) the anticipated pool size, the support spaces needed and basic technical information on materials and systems desired. Subsequent submittals should provide drawings and details of the proposed swimming pool facility.

Factors in Determining Pool Size

Any swimming facility sponsored by a public school must be designed foremost for instructional purposes. Such design allows the teaching of basic swimming strokes, general water safety, boat safety and lifesaving. Additionally, a pool design enabling the teaching and practicing of diving may be desirable. Recreational swimming for students and the community is a valuable by-product of an instructional swimming program and should not be overlooked in planning the facility. Also not to be overlooked is the possibility for the pool facility to act as a water supply for a fire suppression system. However, State funding is available only in support of the instructional program (K-12) or for a facility serving as an emergency water storage facility.

Pool size, therefore, will be determined by the district primarily by three factors: population, the instructional program and the program space requirements. These factors will need to be balanced with the available funding and the operations and maintenance costs for the facility.

Population Served

The District will need to analyze the following information for program determination. This information must also be provided to the Department of Education:

- current district enrollment of the population to be served by the facility (K-12)
- breakdown of enrollment by individual school and grade level.
- an enrollment projection for five years beyond the anticipated occupancy date by school and grade level.

Program to be Offered

Pool instructional space is determined by the classes, basic and elective, to be offered and the student population to be served. In addition to basic swimming instruction, courses that may be included in a well-rounded program are described as follows:

- Competitive Swimming to foster elements of teamwork, character and skills among students.
- Water safety courses to develop and train instructors for the American Red Cross. These instructors qualify to teach lifesaving and to conduct water programs for all age groups.
- Water safety aide courses to develop and train young people in pool safety and the fundamentals of teaching swimming.
- Boat safety instruction for students and for interested community members. Such topics as overloading, personal flotation devices, maneuvering in rough water, high speed turning, capsizing, explosion and/or fire, and falling overboard can all be discussed during water safety courses. Many of these topics can also be demonstrated through the use of a small boat.
- Drown proofing: A system of self-rescue developed at Georgia Institute of Technology, particularly aimed at those who feel they will never learn to swim a regular stroke, but want to be able to save themselves in the event of an emergency.

- Diving instruction for the one meter board.
- Synchronized swimming training For those boys and girls who are interested in the exacting and artistic demands that this activity has to offer.
- Scuba training: Almost every region of the United States has pools offering this training to the general public.

If the pool will be available for community use in off-school hours additional activities to be considered in planning are:

- Infant training: This is a specialized offering, given by an experienced swimming instructor. Many infants have been given an excellent start as swimmers. Such training reduces the fear associated with water and reduces the time a student needs to learn to swim.
- Adult swimming courses These courses prove to be surprisingly poplar for their social as well as instructional benefits.
- Swim to stay fit programs for persons who want a relaxing activity which maintains body tone. Individualized activity is stressed in this program.
- Survival training for the general public A large number of people are concerned with being able to get themselves out of difficult situations.
- Rescue squad training: Most rescue squads feel that they should be prepared to handle all emergencies. There are many areas having potential water hazards which are protected by such squads.
- General recreational swimming for the public Family nights, mother-daughter, father-son, and other combinations can provide a source of revenue to support pool operation.
- Water ballet training For persons of all ages who enjoy group training and the artistic results that an exacting physical activity can produce. Water ballet allows for all ranges of talent.
- Fly and bait casting Training practice can be provided.

In determining the programs to be offered, the district should consider the following recommended courses and hours of instruction along with any current Red Cross recommendations.

Recommended Courses

BASIC COURSES	INSTRUCTIONAL HOURS
Pre-school Swimming (to 5yrs.)	30
Beginning Swimming	25
Advanced Beginning	25
Intermediate	25
Swimmers	25
Advanced Swimmers	25
Advanced Lifesaving	25
Lifeguard Training	30
Water Safety Instructor	45
Adapted Aquatics (Handicapped)	10
Water Ballet/ Synchronized Swimming	25
Canoeing/ Kayaking	15
Diving	20
Boating Safety	15
Water games (Water Polo, Basketball)	15
Basic Scuba/ Snorkeling Program	30
First Aid/ C.P.R. (In Conjunction with Water Safety Program)	25
Pool Chemistry	25
Other	25

Small Craft Courses Information

BASIC COURSES	PREREQUISITES	MIN. AGES	TIME REQUIREMENTS
Introduction to Paddling	None	None	Approx. 4 hours
Fundamentals of Canoeing	Swimming Skills	11	Approx. 15 hours
Basic River Canoeing	a) Fundamentals of Canoeing or Equivalent b) Swimming skills	14	Approx. 20 hours
Fundamentals of Kayaking	Swimming Skills	11	Approx. 12 hours
Basic River Kayaking	a) Fundamentals of Kayaking or Equivalent b) Swimming skills	14	Approx. 20 hours

Red Cross Instructional Programs

COURSE	PREREQUISITES	MIN. AGE	TIME REQUIREMENTS
Beginner	None	None	As required
Advanced Beginner	Beginner Skills	None	As required
Intermediate	Adv. Beginner Skills	None	As required
Swimmer	Intermediate Skills	None	As required
Advanced Swimmer	Swimmer Skills Basic Rescue/Adv. Lifesaving	11	As required
Basic Water Safety	None	None	Approx. 4 hours
Basic Rescue	Basic Water Safety Certification	11	Approx. 6 hours
Advanced Lifesaving	Preliminary Swim Test	15	Approx. 21 hours
Adv. Lifesaving Rev.	Current ALS Certificate	15	Approx. 12 hours
Swimmer Aide	None	17	Approx. 6 hours
Water Safety Aide	Swimmer Skills Basic Rescue/ALS Certificate	11	Approx. 19 hours
Basic Swimming Instructor	Intermediate Skills Basic Rescue Certification	None	Approx. 20 hours
Water Safety Instructor	Swimmer Skills ALS Certificate	None	Approx. 40 hours
Adapted Aquatic Instructor	Current BSI/WSI Certificate	17	Approx. 24 hours
Instructor Reviews	Current Instructor Certificate	None	As required

Note: Ages are those on the first day of the courses.,

Program Space Requirements

The Red Cross recommends certain pool space minimums in implementing identified program components. Chart 1 and Figures 1 and 2 on the following pages contain current requirements

Chart 1 - Minimum Instructional Requirements

Program	Instructional Lane Per Student	SQ.FT./ Student	Water Depth Minimums	Deep End (Over Head)	Diving	Comments
Beginning Swimming	4'x 25'	100/ Student	Recommend 3'to 3 ½'	No Regulation	No Regulation	Possible minimum pool sizes for optimum class or 10 students: 40'wide x 25'long or 20'x 50'(5 students at each end).
Advanced Beginning Swimming	4'x 60'	120/Student	25'of 3 ½' Water Depths	6'to 9'	No Regulation	Red Cross allows 60' swimming length to be done in laps, thus 25'x 40' pool would be acceptable but is not recommended.
Intermediate Swimming	4'x 60'	120/student	25'of 3 ½' Water Depth	6'to 9'	No Regulation	
Swimmer	4'x 60'minimum (4'x 75 rec.)	120/Student 300/Student	No Regulation	8'to 10' Diving Depth	½ meter board or platform	Minimum size possible 20'x 60'(rec. 20'x 75'). If meter board is used width must be increased by 1'-8".
Advanced Swimmer	4'x 60'minimum (4'x 75' Recommended)	120/Student 300/Student	No Regulation	12'Diving Depth	1 meter board	21'8" Width Required 75'Length Recommended
Advanced Life-Saving and Lifeguard Training	25'x 75'	120 Student	25'of 3 ½' Water Depth	6'to 9'	No Regulation	

Note: Boating safety will be a part of some courses. The ability to turn a boat or kayak end-for-end is important. Pool width should be twice that of the boat.

Figure 1 - Lane Dimensions and Water Depths

This figure illustrates minimum recommended lane dimensions and water depths for each instructional program offering: Beginning, Advanced Beginning and Intermediate Swimming. Requirements for diving instruction are also illustrated.

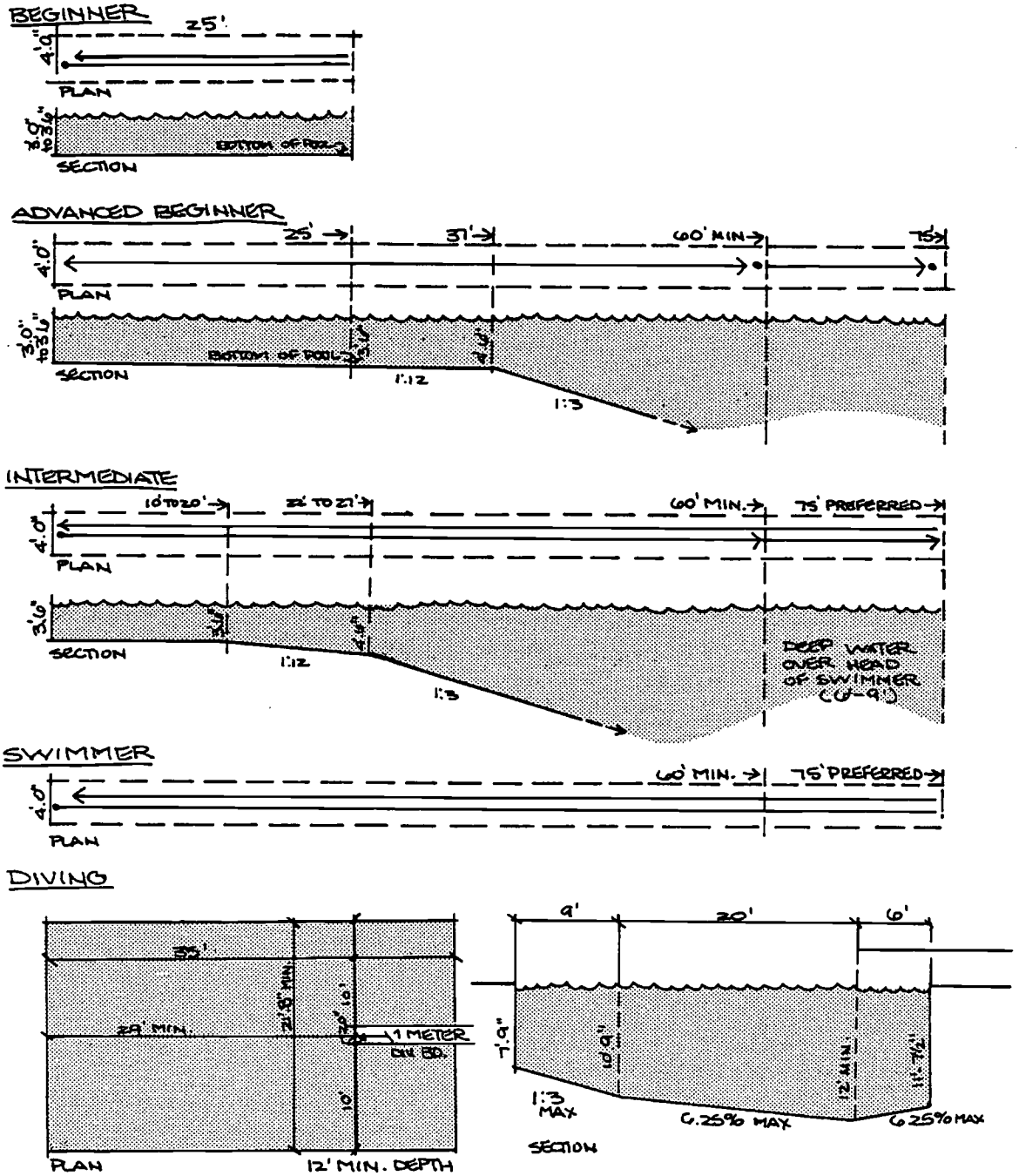
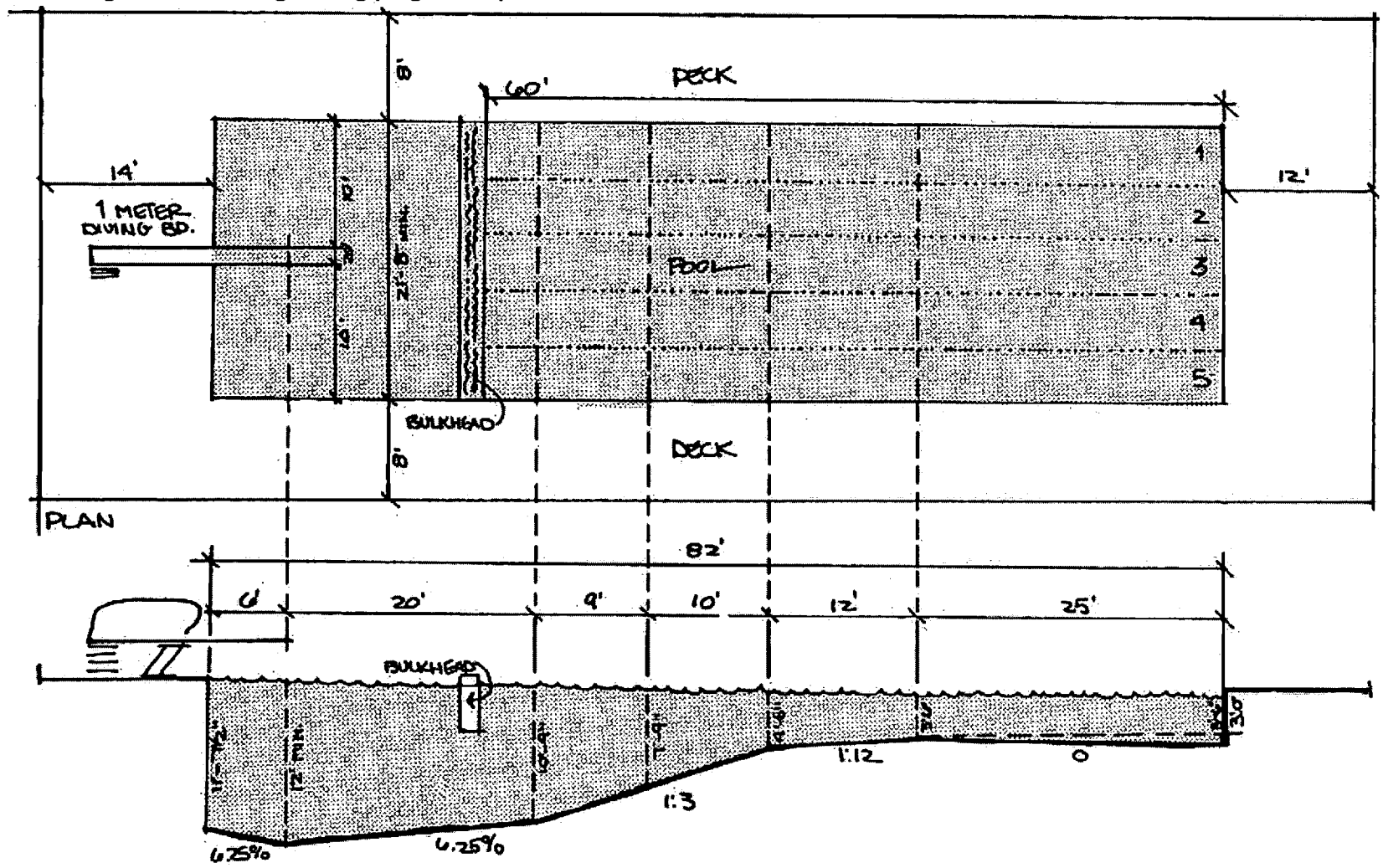


Figure 2 - Pool Layout

Pool design for Swimming/Diving program requirements:



Operations, Maintenance and Repair

A district developing a swimming facility must take into consideration the following cost factors in planning the facility and incorporating it into the district's operating budget:

1) annual routine and preventive maintenance and repair

2) major maintenance and renewal

3) utilities

4) possible increased costs for additional instructors/staff

5) community use of pool could be a source of income but will also increase maintenance, repair and staff cost

6) possible increased expenses to transport students to and from the facility

7) increased insurance costs, however, the possibility should be explored as to the feasibility of using the pool as a water reservoir which may reduce the cost of fire insurance.

8) life cycle cost of the proposed facility

Allowable Pool Size

General Philosophy

The total educational square footage, including the swimming pool facility, housing the population to be served must be at or below the space allowed under 4 AAC 31.020.

Based on an analysis of instructional needs and facility costs as discussed in the preceding chapter, a school district should select the smallest standard pool size from those listed in Chart 2 that would meet program goals and student population.

Assuming, however, that in addition to primary use for school instruction, the pool facility will also accommodate community use and possibly some interscholastic competitive and athletic event swimming, certain general recommendations can be made regarding pool sizes which the district may want to consider.

Recommendations

1. The optimum size pool to offer a full program of courses as outlined in chapter 2 is 75' x 30'. This meets minimum requirements for instruction programs, boating safety and recreational swimming, and would meet minimum requirements for some interscholastic competition.

2. For a small program of required instruction with 10 students per class, a 22'x 60'pool is recommended.

3. For a program which includes boating safety, a pool must be at least 25'x 40'. This is also the absolute minimum size to offer a small program of intermediate instruction, but is not recommended by the Red Cross for such a program. The minimum size pool for offering a mandatory and elective program would be 25'by 50'.

4. If diving is to be emphasized it is important that the full 12'diving depth be directly under the last 1 ½'of the diving board. Note: Rather than emphasize diving depth, it is more important that divers be trained to dive as shallow as possible. Most head and neck injuries occur when students dive off the edge or in the shallow end of the pool. Most diving tanks vary in depth with older constructed tanks having 8'to 10'depth and modern tanks 12'or more. An 'L" shaped pool which isolates the diving area, though more costly, is the most desirable configuration.

5. To pick the most versatile depths for these pool sizes, use diving tank requirements for one end, 3'6" for intermediate depth, and depending on community use concerns possibly a small section of 3'0" depth at shallow end. Note: A removable insert in a 3' 0" shallow end which allows young children to overcome water fear in a comfortable atmosphere and assists in the offering of adapted aquatics to the disabled can be desirable.

Chart 2 on the next page summarizes standard pool sizes and the student population that can be served by each in a district offering a basic swimming program consisting of 3 required courses.

Chart 2 - Summary of Standard Pool Sizes and Population Served

Pool Dimensions	Pool Area S.F.	Students Per Class Period	Students Per Year Able To Receive Mandatory Courses	Total Population Served 100% Basic Swim Program			Total Population Served 50% Basic Swim Program		
				Enrollees per year in all 3 classes	Secondary Only (6 Years)	Elementary and Secondary (12 Years)	Enrollees per year in all 3 classes	Secondary Years (6 years)	Elementary Years (6 years)
1. Recommended Minimum 22'x 60'	1,320	20	480	160	960	1,920	80	480	960
2. Standard Instruction 30'x 60'	1,800	20	480	160	960	1,920	80	480	960
3. Minimum Competitive 28'x 75'	2,100	30	720	240	1,440	2,880	120	720	1,440
4. "Montreal" 36'x 75'	2,700	50	1,200	400	2,400	4,800	200	1,200	2,400
5. L Shape 45'x 75'plus 45' x 30' (Diving)	3,375 1,350	100	2,400	800	4,800	9,600	400	2,400	4,800
6. "Competition" 45'x 75' (25 yards)	3,375	100	2,400	800	4,800	9,600	400	2,400	4,800

Method for Determining Allowable Size

The allowable size of the actual pool tank is based on the district's analysis of current program needs, anticipated population and the amount of space required for the instructional program. Though a certain size may be allowable, the district may need to provide a smaller size due to anticipated operation and maintenance costs.

Program Determination A district developing an instructional plan must consider the following factors:

1. type of swimming program, i.e. beginning swimming, advanced life saving and lifeguard training (see Instruction Programs and Red Cross recommended courses)

2. amount of instruction for each course to meet minimum requirements (see Instructional programs and Red Cross requirements)

3. maximum amount of water square footage per student for each course offered (see Chart 1)

4. total number of students to be served by the program and per class estimates

5. length of each course, i.e. half a semester or a semester. Note: courses may be separate or offered as part of physical education program

6. number of hours in school day

7. swimming instruction staffing pattern; assuming a normal school day of six hours, at least three must be mandatory swimming courses.

Knowing what it must set aside for its basic program, the District can consider alternatives such as additional mandatory requirements, enlarging voluntary offerings, increasing usage to 6 periods per day to gain greatly expanded offerings with the same facility or, although not recommended, reducing the number of periods for which the instruction will be available.

Determine Size of Pool Review the information in the section **Factors in Determining Pool Size** and Figures 1 and 2 which illustrate pool layouts:

- Determine the dimensions necessary to accommodate program needs based on the program determination above.

- Select the smallest pool from Chart 2 - Summary of Standard Pool Sizes that will accommodate the combination of factors evaluated above.
- Chart 2 shows the "Competition" pool as the largest available pool size for selection. This pool size (45'x 75) is the maximum size pool for which the Department of Education

will contribute funding. If the program demands required a pool area larger than the "Competition" pool, the district should be prepared to identify additional sources of funding.

The work sheet on the following page may be used to determine appropriate size pool for a given program and student population to be served.

Program Determination Worksheet

Swimming Instructional Program Type	M or E	Minimum hours Instruction	Water Square Foot Per Student	# of Students Per Class Period	Length of Course Semester or ½ Semester	Number of Class Periods Per Day	Staffing Instructional Staffing	Total Students Served	Chart 2 Pool Size Needed

Conceptualizing the Swimming Facility

After the envisioned instructional program and other uses of the pool area have been determined, the complete swimming facility should be conceptualized.

- Adequate deck space for instruction must be provided. A minimumof twelve feet is recommended for this purpose.

- A minimum of 6 feet of deck space should be allowed on all other sides of the pool for safety . As many as 2/3 of the group will be out of the water at any one time.

- Equipment, office space, locker and shower rooms must be included and designed with a functional amount of space depending on population served.

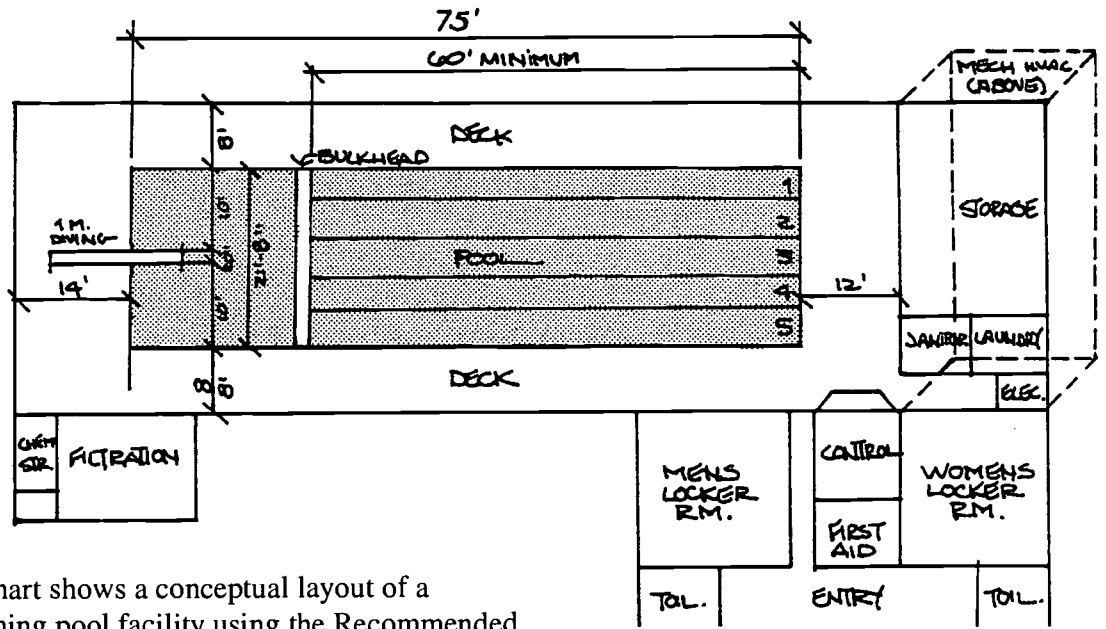
- If diving is provided, ceilings should be at least 16 feet above the highest board surface. A one-meter board and 12 foot depth is the recommended minimum for diving.

- Safety is of primary concern, a secure area for chemical storage should be provided, as well as a control station and first aid area. (For additional Health-Safety information see HEW Publication No. DCD79-8319, Swimming Pools, Safety and Disease Control, 1979)

- If the district desires to utilize the pool as a water storage facility for a fire suppression system, considerations for tying into the fire alarm system, providing backup power for pumps, water distribution, specifications for piping, sprinkler heads, etc. should be referred to a mechanical engineer or fire sprinkler design company. Some room for additional equipment may be required.

- Because of safety and health concerns, several agencies have regulatory authority covering a water safety facility. In addition to applicable uniform codes for building, mechanical, electrical, fire safety, etc., Districts must adhere to DOT/PF barrier free regulations and Department of Environmental Conservation health and safety regulations, including those covering swimming pools. (18AAC 30)

Figure 3 - Conceptual Layout



This chart shows a conceptual layout of a swimming pool facility using the Recommended Minimum Pool (22'x 60') with a diving instruction area. For this type of facility, approximately 7,800 square feet would be anticipated for the total building area.

Pool	1,635 sf
Deck	2,180 sf
Control	120 sf
First Aid	100 sf
Locker Rooms	740 sf
Laundry	70 sf
Janitor	80 sf
Mechanical/HVAC @ 7%	560 sf
Filtration	250 sf
Chlorine	30 sf
Chemical Storage	60 sf
Electric	50 sf
Structural - Deck Equipment	340 sf
Toilet	240 sf
Circulation/Entry/Exit	630 sf
Interior walls @ 3%	230 sf
Planning Factor @ 5%	385 sf
Total Area	7,700

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