Swimming Pool Guidelines for Educational Facilities

State of Alaska - Department of Education & Early Development
Finance & Support Services / Facilities **2019 Edition**

PRIMARY AUTHOR

Tim Mearig, AIA
Architect
Alaska Department of Education & Early Development
Juneau, Alaska

CONTRIBUTORS

Larry Morris
Architect Assistant
Alaska Department of Education & Early Development
Juneau, Alaska

Facilities Staff
Department of Education & Early Development

ACKNOWLEDGEMENTS

Thanks to the Bond Reimbursement and Grant Review Committee members who reviewed the publication in its draft form and to those in the Department of Education & Early Development who were responsible for the predecessor to this document.

Originally published in 1983 by the State of Alaska, Department of Education as *Water Safety Facilities and State Financial Aid*. Published in February 1985 and in 1997 as *Swimming Pool Guidelines*.

Table of Contents

Introduction

Purpose

These guidelines have been developed to give assistance and direction to Alaska school districts in planning for school swimming pools, and to provide the department with a basis for review of applications submitted by school district for state participation in funding of pool facilities for educational purposed in Alaska. The direction for development of these guidelines comes from statute [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.

Eligibility for state aid for swimming pools from statutory grant funds through AS 14.11.011 (grant applications), is first subject to limitations in general space eligibility established under 4 AAC 31.020. After general space eligibility is determined, the specific provisions in this guide for swimming pool facilities for school use can be applied. Eligibility for state aid for swimming pools through debt reimbursement is governed by the provisions in AS 14.11.100 (state aid for costs of school construction debt). To the extent that state aid under AS 14.11.100 requires a recipient entity to meet space eligibility determinations under 4 AAC 31.020, those provisions will also apply to space related to swimming pool facilities for school use. If the provisions of AS 14.11.100 provide for state aid without regard to space eligibility, the specific provisions in this guide for swimming pool space eligibility will be applied. This guideline identifies standards for swimming pool size based on the documented educational program and student population receiving programed instruction. 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.

Common Issues

Evaluating a school district's eligibility for swimming pools space is often challenging. Educational programs related to pool facilities varies between districts. Consensus standards are not available which index those programs to exact amounts of either pool surface or building square footage. More often than not, pool facilities house a combination of school and non-school uses. Those use arrangements must be documented and may factor into eligibility determinations. In response to statutory requirements, certain features typically found in full-service pool facilities are not eligible for state participation. An understanding of these issues, up front, will help districts prepare requests for school swimming pools, and will streamline the eligibility determination process.

Eligible Uses and Curriculum

Swimming pool facilities are expensive both to construct and to operate. State participation in these costly facilities should be guided by the essential importance of the proposed uses and curriculum. School districts have freedom to develop a set of curriculum that meets all of their local objectives—even considering community uses. However, state participation will be

targeted toward learn-to-swim programs. Specific criteria regarding eligible uses and student populations are covered in more detail in the section, *Allowable Pool Size*.

Joint-use Facilities

Understanding a pool facility's use and management by non-district entities and non-school programs is essential. In keeping with statutory requirements, the department has a responsibility to restrict the funding of recreational space. Under adopted regulation, the department must calculate and apportion costs for operations, maintenance, and capital renewal among sharing entities. In order to meet this obligation, information such as the following is needed from those with operational responsibility for the pool facility:

- Facilities that are not owned, or under the direct control of the school district must provide evidence of a joint use agreement with the owner that identifies the responsibilities of each party with respect to operations, maintenance, and capital renewal, each of which must meet the requirements of AS 14.11.011(4), over the life of the facility.
- Hours of use dedicated to the school district's instructional program are needed. If evidence of sole use for the district's K-12 program is not provided, state participation may be prorated based on the number of hours per school day in which K-12 school curriculum based education takes place in the facility, among other factors.

Ineligible Pool Elements

Statutes provide that allocations of state aid for school capital projects be restricted from single purpose recreational and sporting facilities and elements. Although this guide deals primarily determining a district's eligibility for swimming pool space, there are some necessary restrictions on certain pool features. The costs for facility features such as slides and saunas are required to be excluded prior to any calculations that use approved space to apportion eligible costs of state-aid.

Authority

Statutory Requirements

AS 14.11.013(d) provides that:

> The department shall reduce a project budget by the cost of those portions of a project design that the department determines (1) are for construction of student residential space, planetariums, hockey rinks, saunas, and other facilities for single purpose sporting or recreational uses that are not suitable for other activities; or (2) do not meet the criteria developed under AS 14.11.014(b) that are applicable to the project. This subsection does not apply to funding for swimming pools that meet criteria established by the department.

AS 14.11.100(h) requires the department to adopt standards on the size of swimming pools:

> 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 & Early Development Review

AS 14.07.020(a)(11) provides that 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 & Early Development 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, 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.

4 AAC 31.021(c)—see similar language at 4 AAC 31.060(j) for debt reimbursement—requires that:

> A grant application that includes new construction, addition of space, or replacement of space must include verification that
>
> (1) the enrollment of the attendance area will reach the design capacity of existing school facilities within two years.
>
> (2) the situation cannot be relieved by adjusting the boundaries of service area and transporting the children to nearby schools;
>
> (3) as demonstrated by commonly accepted demographic techniques resulting in population projections accepted as reasonable by the department, the proposed facility will reach and sustain design capacity within five years after the anticipated date of occupancy;

Educational specifications for the requested pool facility must include a projection of student population, in accordance with accepted methods, to a point of five years beyond the anticipated occupancy date of the facility.

4 AAC 31.060(c) provides that:

> A school facility for which state aid is sought under AS 14.11.011 or 14.11.100 may be built jointly with municipal and state offices, health clinics, community libraries, and other spaces if approved by the commissioner as to compatibility and separation of funds. The commissioner has final authority to determine the proration of space and cost in a jointly built project.

Educational specifications for the requested pool facility must include a projection of student population, in accordance with accepted methods, to a point of five years beyond the anticipated occupancy date of the facility.

For additional information on the data required for a determination of eligibility for state aid, see the section in this publication **Method for Determining Allowable Size**.

Factors in Determining Pool Design

Any swimming facility submitted for state aid by a public school district must be designed foremost for instructional purposes. Such design allows the teaching of basic swimming strokes, general water safety, boat safety, and lifesaving.

A pool design enabling the teaching and practicing of diving may be desirable, as may be a design that supports the opportunity for recreational swimming or fitness swimming, both valuable by-products of an instructional swimming program. These, and other uses should be considered in the overall facility design, however, no additional space will be assigned for these functions.

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 design, therefore, will be determined by the district primarily by three factors: population, the instructional program, and any desired additional uses. The total program space requirements will be a combination of these factors. These factors will also need to be balanced with the available funding—both capital and operating—for the construction, capital renewal, and operations and maintenance costs for the facility.

Programs to be Offered

Pool instructional space is determined by the classes, mandatory and elective, to be offered and the student population to be served.

Mandatory Courses

Instructional program courses for K-12 students that are eligible for inclusion in determining a pool size for state-aid include the following:

- Basic swimming instruction, including stroke development, substantially similar in instructional content to the latest published American Red Cross learn-to-swim program.

Elective Courses

In addition to the mandatory courses, the following courses are allowable for consideration as part of an elective instructional program when the program is serving students in any grades K-12.

- Competitive swimming and diving, when part of an Alaska School Activities Association (AASA) sanctioned competitive swim-dive team. Club teams are not supported.
- Boat safety/Maritime: Instruction for students in such topics as overloading, personal flotation devices, maneuvering in rough water, high speed turning, capsizing, explosion and/or fire, and falling overboard. While many of these instructional areas will require

small boats and larger bodies of water, some of these topics can be taught and the necessary skills developed in a pool facility. In some of this coursework, the ability to turn a small boat, canoe or kayak end-for-end is important. Ideally, pool width should be twice that of the boat length.

- Drown-proofing/Survival: Formal drown-proofing is based on 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. When combined with survival elements, lessons focus on personal water safety, use of personal flotation devices (PFDs), safe rescues of others, cold water survival techniques, hypothermia, and ice safety.
- Adaptive and Occupational/Physical Therapy: Instructional programs that provide students of all abilities and special needs the lifelong skill of being comfortable and safe in the water, as well as confident and independent in recreational activities.
- Scuba training: Diver courses, including those leading to certifications, in support of underwater activities.
- 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.

Community Use

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

- Synchronized swimming training: For those individuals who are interested in the exacting and artistic demands that this activity has to offer.
- 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 that 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.

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 minimum of 12 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. Diving programs are not allotted any additional space.
- 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 the Center for Disease Control website; www.cdc.gov/healthywater/swimming/aquatics-professionals/index.html)
- 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. (18 AAC 30).

The following figures contain typical elements related to pool features that support both eligible instructional programs and pool features for other uses.

Figure 1 - Lane Dimensions and Water Depths

This figure illustrates typical minimum lane dimensions and water depths for learn-to-swim instructional programs. Illustrations are generally progressive from basic to more advanced programming. Requirements for diving instruction are also illustrated.

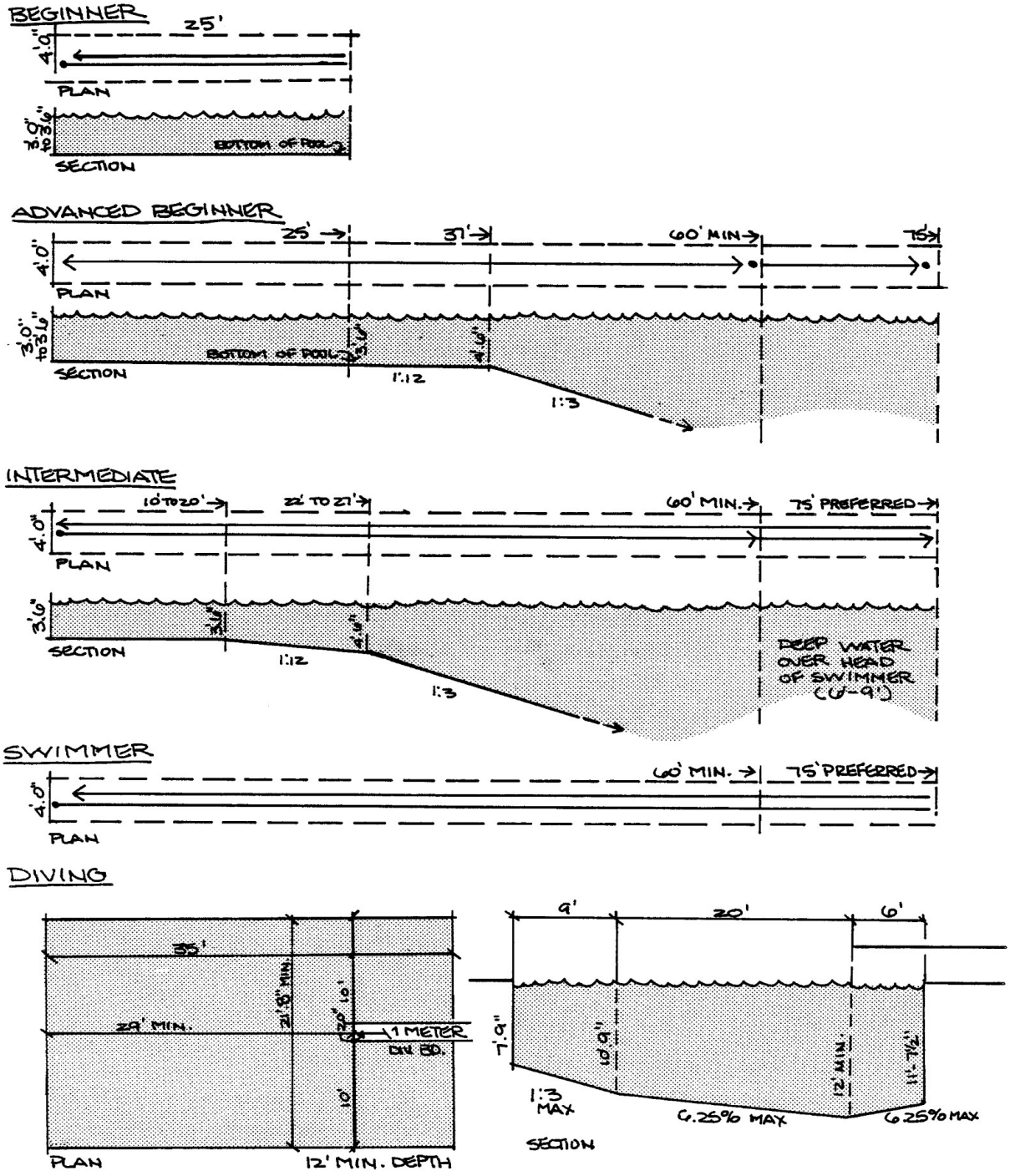


Figure 2 - Pool Layout

This figure illustrates one option for a pool design for combination Swimming/Diving program requirements. Others include Montreal and L-shaped layouts:

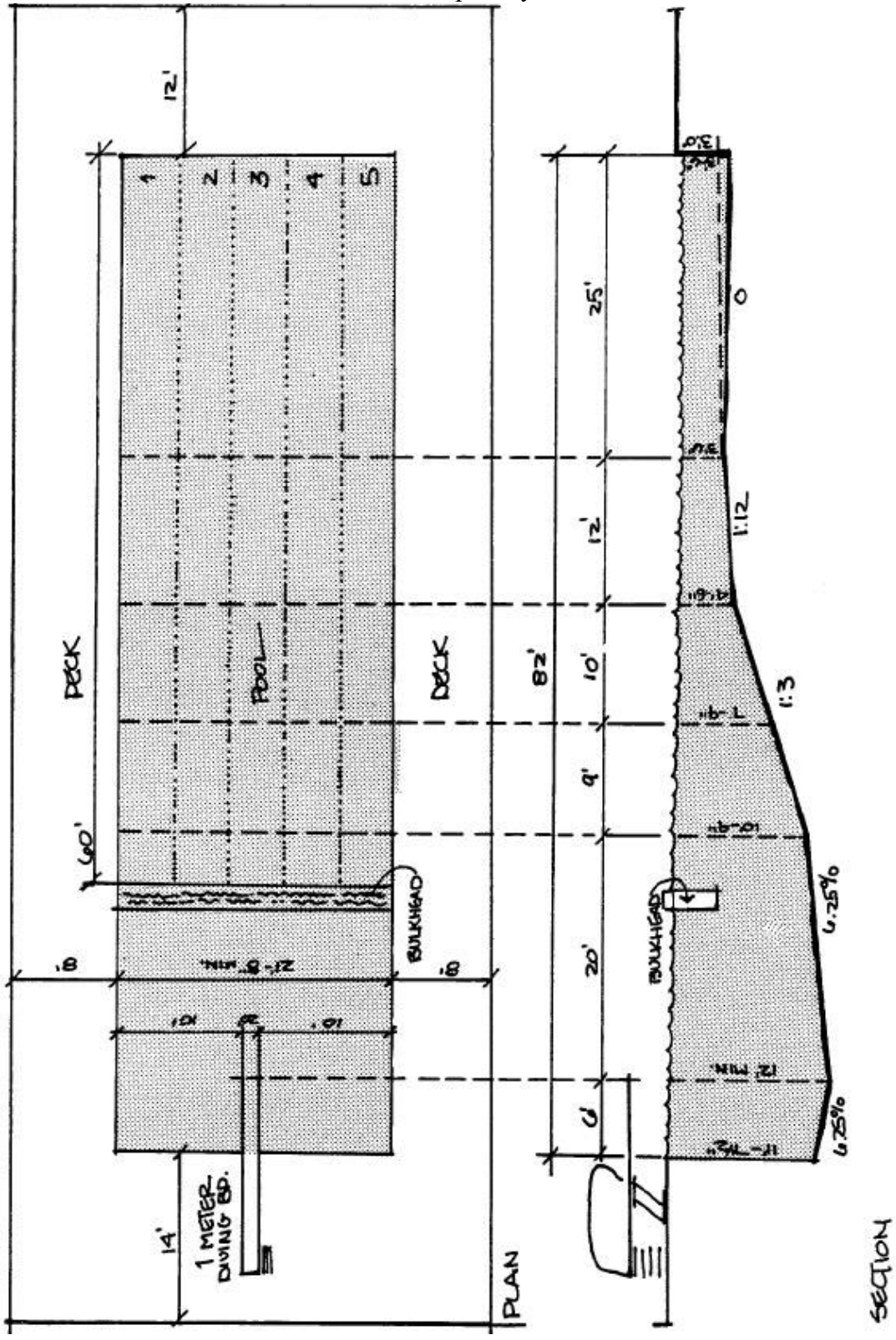
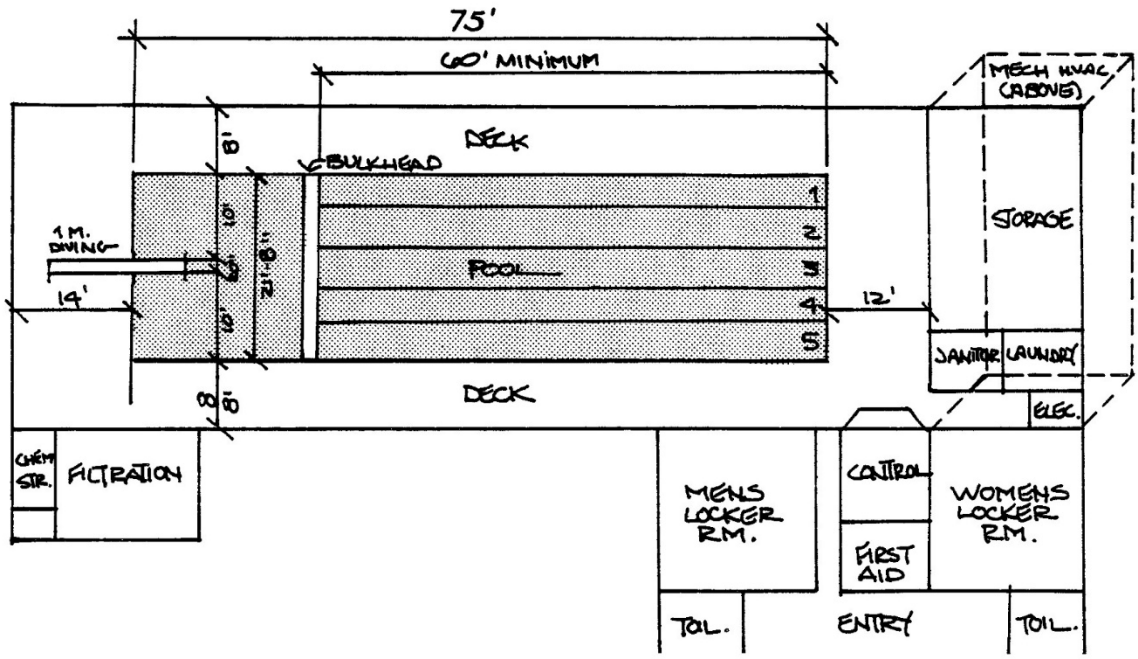


Figure 3 - Conceptual Layout



This figure shows a conceptual layout of a swimming pool facility using the eligible pool area shown in the **Pool Size Table** for an instructional program with between 201 -400 students.. For this size of pool, 8,500 square feet (sf) are allowed for the total building area.

Pool	1,650 sf
Deck	2,890 sf
Control	120 sf
First Aid	100 sf
Locker Rooms	750 sf
Laundry	70 sf
Janitor	80 sf
Mechanical/HVAC @ 7%	560 sf
Filtration	280 sf
Chlorine	30 sf
Chemical Storage	60 sf
Electrical	80 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	8,500 sf

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

For funding programs where state-aid is dependent on space eligibility, 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. If space eligibility is determined, pool size may also be limited based on the number of students served in by eligible instructional programs.

For funding programs where state-aid is available without regard to space eligibility, pool size will be based on an analysis of a district's instructional program and the resulting annual number of students receiving instruction in eligible programs, whether mandatory or elective.

Eligible pool size and total building area will be selected from the Pool Size Table based on the approved number of students receiving instruction in eligible programs.

Populations Served

The district will need to analyze the following information for a pool size determination. This information must also be provided to the Department of Education & Early Development:

Space Eligibility Determination

- 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 Determination

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

1. Type of aquatics program (e.g., learn-to-swim, drown-proofing/survival, special needs student OT/PT, competition, etc.). For potential programs, see **Programs To Be Offered**, earlier this publication, or refer to the latest published learn-to-swim guidance from the American Red Cross. This publication does not limit district or community aquatics programs; it does designate whether participants in those programs are included in the eligible population used to calculated state-aid for school pool facilities.

2. Whether the instructional programs are classified as Mandatory or Elective under the definitions in this guideline.

3. The following information for each instructional program:
    a Minimum hours (time) of instruction,
    b Number of students per class period,
    c Length of course, and
    d Number of class periods per day.

    This information is used to calculate the total number of students served by that program on an annual basis.

A sample Program Determination Worksheet is shown below. This type of tabular listing of programs and their elements is key to determining the number of students receiving programmed instruction per year for use in the Pool Size Table.

Program Determination Worksheet

Use the table below to document the instructional program.

Swimming Instructional Program Type	Mandatory or Elective	Minimum Hours Instruction	# of Students per Class Period	Length of Course Semester or ½ Semester	# of Class Periods per Day	Instructional Staffing	Total Students Served

Stipulations & Conditions

- A district's documented educational program associated with swimming pool use must be a board-approved curriculum.
- A district must provide evidence of a learn-to-swim program substantially similar in instructional content to the latest published American Red Cross learn-to-swim program.
- Only learn-to-swim programs (instructional curriculum) are considered mandatory; all other instructional programs will be considered elective.
- The minimum threshold for a district to qualify for state aid for a swimming pool facility is 100 students receiving instruction in a mandatory program.
- When counting the number of students receiving programmed instruction in the course of a year, a maximum of 30 percent of that yearly total can be those in elective coursework.

Ineligible Pool Elements

The following items are not considered as elements of a school swimming pool. The cost of these items will be removed from a project prior to any allocation of state aid which is based on an eligible pool size determination:

- Recreation accessories including slides, saunas, spas or hot tubs, whirlpools, and equipment that cannot be demonstrated to be integral to the instructional program;
- Non-swimming activities for the general public use;
- Locker rooms, offices, lobbies, etc. deemed in excess of those required for school district classes.

Method for Determining Allowable Size

Step 1 – Document the district's instructional program and calculate the number of students served, annually, in each program.

Step 2 – Review the minimum qualification regarding number of students served by the program. If the program serves fewer than 100 students, the district is not eligible for state-aid for a pool facility.

Step 3 – For programs serving 100 or more students, calculate the annual number of students served in mandatory programs and those served in elective programs. If the number of students in elective programs is more than 30 percent of the combined total, reduce the number of eligible students to match that cap.

Step 4 – Using the **Pool Size Table**, find the corresponding bracket in column one *Students Receiving Programmed Instruction per Year* in which the districts eligible number of students receiving instruction fits. The *Maximum DEED Pool Surface Area* and *Maximum DEED Facility Square Feet* are shown on the right side of the table.

Pool Size Table

Use the table provided below to determine the allowable pool size based on the total number of students served by the approved instruction programs.

Students Receiving Programmed Instruction per Year	Instructional Staffing	# of Students per Class Period	# of Class Periods per Day	Total Hours Instruction per Course	Allowable Pool Dimension	Maximum DEED Pool Surface Area	Pool Facility Factor	Maximum DEED Facility SF
100 - 200	1	10	4	100	15ft x 75ft	1125sf	5.5	6,190sf
201 - 400	2	20	8	200	22ft x 75ft	1650sf	5.2	8,500sf
401 - 600	3	30	12	300	29ft x 75ft	2175sf	5.0	10,875sf
601 - 900	4	40	16	400	36ft x 75ft	2700sf	4.7	12,690sf
901 - 1200	5	50	20	500	43ft x 75ft	3225sf	4.5	14,510sf
1201 +	5+	50+	20+	500+	50ft x 75ft	3750sf	4.0	15,000sf

Notes:

1. Approximately 10 students per instructional staff
2. Each instructional staff can teach one level to 400 students/year
3. The Pool Facility Factor incorporates 6ft pool decks on three sides, 12ft deck on one long side, locker rooms, administrative office space, pool mechanical, and circulation factor