

FACILITY INFORMATION AND DESIGN

OVERVIEW OF THE FOUR AQUATIC SPORTS

The World Aquatics (formally FINA) is the international governing body for competitive swimming, water polo, artistic swimming and diving. World Aquatics recognizes Aquatics Canada as the national body for each of these four sports in Canada. Members of Aquatics Canada include: Swimming Canada, Water Polo Canada, Canada Artistic Swimming and Diving Canada. Each of the four aquatic sports has both a national and provincial governing body.

MEMBERSHIP

	Swimming	Water Polo	Artistic Swimming	Diving
Competitive	3,700			75
Non-Competitive	2,600			1,080
Summer	3,400			
Masters	1,000			
Varsity	100			
Total	10,800	1,100	800	1,155

SPORT INFORMATION

	Swimming	Water Polo	Artistic Swimming	Diving
Number of Clubs	135	16	23	9
Competitions / Year	200	20	8-10	5

FOR MORE INFORMATION:

For more information as it relates to Facility Design specific to the four aquatic sports, please contact the following:

Swim Alberta

www.swimalberta.ca

Contact information: (780) 415-1780

<https://swimalberta.ca/contact-us/>

Alberta Artistic Swimming

www.synchroalberta.com

Contact information: (780) 415-1789

<http://synchroalberta.com/contact-us/>

Water Polo Alberta

<http://albertawaterpolo.ca>

Contact information: (403) 281-7797

http://albertawaterpolo.ca/page.php?page_id=101313

Diving Alberta

<http://www.albertadiving.ca>

Contact information:

<http://www.albertadiving.ca/contact-alberta-diving>

FACILITY DESIGN

Facility design refers firstly to a swimming facility's physical specifications: length, width, depth, number of lanes, lane width, deck width, etc. It also refers to the process used to get a facility built: planning, budgeting, lobbying community organizations and politicians, choosing facility specifications, etc.

Being involved in the early stages of the facility design process is extremely important as once a design has been World Aquaticsized or facility has been built, it can be prohibitively expensive to "fix" poor design decision.

Design Options

There are two basic design options in aquatic facilities, conventional and leisure.

- *Conventional facilities* are rectangular or square in shape with lane ropes, flags, starting blocks and lane markings. Conventional facilities are designed to accommodate a wide range of activities including swimming lessons, recreational classes, training and competitive sport.
- *Leisure facilities* which are designed to accommodate leisure or recreational activities almost exclusively.

Why consider a conventional facility?

Conventional facilities meet the demands of a very broad range of participants. Because of their design, such facilities can be used simultaneously by many different groups of users at the same time provided the facility is large enough and well programmed. Additionally, conventional facilities will meet the needs of fitness swimmers who purchase season passes.

Below is a *sample* of the participants and users who benefit from the availability of a conventional facility.

Learn to Swim Lessons	Recreational Swimmers	Masters Swimmers
Aqua-fit	Competitive Swimming	Diving
Artistic Swimming	Water-polo	Lifesaving Sport
Junior Lifeguard Club	Canoe Polo	Underwater Hockey
SCUBA Lessons	Lifeguard Courses	Triathlon Training

Leisure facilities are specialized facilities. They only cater to leisure swimmers and cannot easily meet the needs of the entire swimming community. Wave pools, water features and lazy rivers cannot effectively meet the needs of competitive sport, fitness or recreational swimmers who want to do fitness swimming.

It is possible to build a facility with both styles of pools. The first option is to build two separate sections within one facility. Alberta has good examples of this style including East

Link Centre, Grande Prairie; Macdonald Island Park, Fort McMurray; Okotoks Recreation Centre, Okotoks; Family Leisure Centre, Medicine Hat; and the Brookfield Residential YMCA by Seton, Calgary. The other option is to attach slides or beach areas to a conventional pool which can create difficulties if the pool is intended to host competitions.

PHYSICAL SPECIFICATIONS

Each aquatic sport has specific facility rules (specifications) at the International, National and in some cases at the Provincial level that need to be met and considered in the design phase. The goal should be to partner with the community planners and have a facility that meets the widest needs in terms of training, hosting of competitions and the community at large.

If your community will be looking to host competitions then some minimum pool specifications need to be met. The physical specifications for facilities are dependent on the level of competition being hosted at the facility. This includes the amount of deck space, change rooms, score boards, etc. that will be needed. Minimally facilities need to meet the depth and length requirements for the hosting of events that meet the safety standards of the sport. For International level competitions, facilities should refer to World Aquatics, and for national and provincial level competitions, facilities should refer to the national and provincial governing bodies.

If the minimum facility requirements, which are listed by World Aquatics, are met or exceeded with the health and safety standards, then the aquatic sports can be accommodated.

All aquatic sports can be accommodated in a 53-metre-long pool/tank (with two bulkheads) with a width of 25 metres, a minimal depth at the turning end of 1.35 m and a minimal depth of 4.5 m (10 m tower) at the start end. The pool will need a 25 x 30 m space that is minimally 2.5 metres in depth. Although all aquatic sports can be accommodated in this type of design, the resulting conflicts in programming and usable space for all aquatic sports can be problematic.

Ideally, if diving facilities are to be incorporated into the design, a separate conventional diving tank should be considered in addition to the 53 metre tank. The minimal depth at the start end can then be adjusted to meet the 2.5 m depth needed for the other aquatic sports.

Additionally, for facilities planning on hosting competitions, facilities need to carefully plan in order to have adequate deck space to accommodate athletes, coaches, spectators and officials.

All approved competition facilities in Alberta can be found on the Swim Alberta website: www.swimalberta.ca/officials/approved-competition-pools For specific facility rules please refer to Swimming Canada: www.swimming.ca/swimmingcanadarules/

Please refer to the World Aquatics website for the most up to date rules and regulations. <https://www.worldaquatics.com>

DESIGN CONSIDERATIONS

Pool Requirements by Sport

Swimming:

- 10 lanes (25 m width) by 53 (ideally 54 with two meter bulkheads.) m long with 2 1.5 metre bulkheads. Preferred depth of 2.0 metre

Water Polo:

- Minimum 20 metre width by 30 metre between goal lines, plus a minimum of 2.0 metre at each end behind the goal line. Total length is 34 metre. Preferred depth of 2.0 metre

Synchronized Swimming:

- Minimum length for national competition is 20 metres by 30 metres. Preferred depth of 2.0 m, with a 12 metre by 3 metre area of 2.5 m depth.

Diving:

- 2 by one metre springboards, 2 by three metre springboards, four platforms stacked 10 metre over 5 metre and 7.5 metre over 3 metre. Minimum depth below the 10 metre platform is 4.5 metres. The minimum distance from the front edge of the board/platform to the facing pool wall or bulkhead is 15 metres.

Note: for consideration of hosting events, generally the minimum guidelines for swimming will allow for the hosting of synchro and water polo. Diving requires several unique things to them related to depth and boards/platforms.

Deck Requirements

The deck space surrounding the competition tank needs to be able to support athletes, coaches, officials and other volunteer positions during a competition. In addition, officials for judging, etc. often use platforms that are 1 m high 2 m x 4 m in various locations on the deck.

It is difficult to provide minimum meters for deck space. Training facilities should have a minimum of 3 metres from the edge of the tank to the wall. Competition facilities should have 5 – 10 metres, based on the level of competition. The deck needs to be able to support volunteers, officials, coaches and participants during competition. Multi-use areas that can be converted between event seating and daily dryland training allow maximum flexibility.

Competition Type	Facility	Volunteers / Officials	Coaches	Participants
Novice	6 x 25m	45	25	150
Club Invitational	8 x 25m	60	40	300
Provincial Level	8 x 50m	75	60	450
Summer Club Provincials	10 x 50m	90	75	850

Spectator Seating Requirements

The number of spectators depends on the age and level of the participant. In general, swimmers under the age of 10 will have 2 spectators, meaning a competition with 125 competitors will have approximately 250 spectators. Swimmers aged 11-14 will have approximately 1.5 spectators each, swimmers aged 15 or over will have very few spectators. Below are sample estimates based on the size of pool, competition type and the expected number of participants noting that the numbers will vary based on the level of competition and location of the facility.

Size of Pool	Competition Type	Participants	Estimated Spectators
6 x 25m	Novice	150	250
8 x 25m	10 & Under	125	250
10 x 25m	Club Invitational	300	400
8 x 50m	Provincial	400	600
10 x 50	Summer Swimming Provincials	850	1200

For a provincial level competition, seating for 300 – 750 people is required, depending on the age and level of the competitors. This can be a combination of permanent seating and temporary bleachers.

Storage Requirements

- Team equipment storage
- Facility equipment storage
- Training equipment storage
- Timing and competition equipment storage
- General public equipment storage

Furniture, Fixtures and Equipment

- *Lane ropes (25 and 50 m) – recreational and competitive*
- *Timing equipment – IMPORTANT, one system*
 - *Scoreboard / Video Board*
 - *Start System including backup timing / Timing pads*
 - *Computer Equipment*
- *Back stroke flags/poles/holes*
- *Recall rope and poles*
- *Starting blocks*
- *Portable water-polo nets*

Other Considerations

Training:

- Access to change rooms – men's and women's
- Strength training centre
- Activity studios etc.

Competition:

- Access to additional meeting rooms to conduct meetings and briefings pertinent to the competition
- Space that allows for food preparation and serving to volunteers, coaches, and officials. (plumbing – double sink, cooler, 20-amp outlets for appliances and copiers)
- Access to warm-up/warm-down areas/pools
- Access to change rooms – men's and women's
- Appropriate lighting, higher lux required for events to be televised or web streamed
- Wi-Fi system and fiber-optics – needs to be part of Alberta's supernet

For consideration of hosting events, generally the minimum guidelines for swimming will allow for the hosting of synchro and water polo. Diving does require several unique things to them such as depth and the need for boards/platforms.

**AQUATIC FACILITY DESIGN AND USAGE
SAMPLE DESIGN CONSIDERATIONS**

The following are sample facility designs and potential use to be considered. These should only be considered as a starting point for potential options. Communication with the aquatic sport associations is required to ensure that the facility meets the needs of the community.

Option A - Local Community Pool

Format: 6 lanes x 25 metres with a 1 metre diving board

Expected use, local swimming competitions with a maximum of 150-200 participants.

Lane Width: 2.2 metres	Deck Space: 3.0 metres around pool
Depth: Deep end: 3.5 metres for 12 metres Shallow end: 1.0 metres	Seating: 150 retractable spectator seating 150 temporary bleachers
Electronics: Scoreboard and timing system including back-up timing	Change Rooms: Family, Women's, Men's
Blocks: Basic starting blocks	Other: Strength Training & Fitness Centre
Rooms: 2 Multi-purpose rooms with fridge & kitchen fitness/dance studio	

Option B – Multi-Use Community Pool

Format: 8 lanes x 25 metres with a 1 metre diving board, separate leisure pool

Expected use, local and regional swimming competitions with a maximum of 200-250 participants, may include training for local water polo or artistic swimming clubs.

Lane Width: 2.5 metres	Deck Space: 3.0 metres around pool
Depth: Deep end: 3.5 metres for 12 metres Shallow end: 1.5 metres	Seating: 250 permanent spectator seating 150 temporary bleachers
Electronics: Scoreboard, touchpads and timing system including back-up timing	Change Rooms: Family, Women's, Men's
Blocks: Adjustable wedge starting blocks	Other: Strength Training & Fitness Centre
Rooms: 2 Multi-purpose rooms with fridge & kitchen fitness/dance studio Meeting space for up to 100 people	

Option C – Competition Pool

Format: 8 lanes x 53 metres with 2 bulkheads and 15m hydraulic floor, 1 metre and 3 metre diving boards, 5 metre dive tower, 6 lanes x 25 metres in a separate tank which is part of a leisure pool.

Expected use, local regional and entry level provincial competitions with a maximum of 350 participants. Novice diving, regional water polo and artistic swimming competitions.

Lane Width: 2.5 metres	Deck Space: 4.0 metres around pool
Depth: Deep end: 4.5 metres for 12 metres Shallow end: 2.0 metres	Seating: 350 permanent spectator seating 250 temporary bleachers
Electronics: Scoreboard, touchpads and timing system including back-up timing Control room for up to six people	Change Rooms: Family, Women's, Men's
Blocks: Adjustable wedge starting blocks with backstroke ledges	Other: Strength Training & Fitness Centre
Rooms: 3 Multi-purpose rooms with fridge & kitchen fitness/dance studio Large meeting space for 250 people	

Option D – Premium Aquatic Facility

Format: 10 lanes x 54 metres with 2 bulkheads, 6 lane x 25 metre pool with 1 & 3 metre diving boards and 3, 5, 7.5 & 10 metre dive towers in a separate tank, 8 lanes x 50 (or 25m) metres in a separate warm-up tank.

Expected use: provincial championships and national competitions. Diving, water polo and artistic swimming can host competitions of any sport at the provincial level and above.

Lane Width: 2.5 metres	Deck Space: 5 metres around pool with one side at 10 metres from side of pool
Depth: Competition Tank: 2.5 metres Warm-up Tank: 1.5 metres Dive Tank: 4.5 metres	Seating: 1200+ permanent spectator seating 600+ temporary bleachers
Electronics: Scoreboard, touchpads and timing system including back-up timing, integrated with starting blocks Control room for up to ten people	Change Rooms: Family, Women's, Men's, Officials
Blocks: Adjustable wedge starting blocks with backstroke ledges	Other: Strength Training & Fitness Centre Lighting appropriate for broadcasting
Rooms: 4 Multi-purpose rooms with fridge & kitchen fitness/dance studio Large meeting space for 500 people	