

Donna,

Based on what I saw and what I would recommend for the Sunlight Waters Pool Project, I would suggest a starting budget of \$750,000 to get a modern compliant commercial grade swimming pool and deck area suited for the community's needs. This does not include any bathroom renovation/construction. This would be a realistic budget that would be able to account for the changing market and hopefully have a bit of reserves.

It is important for members of the HOA to understand that building a pool as an HOA, you are classified as a Water Recreation Facility in Washington State and must comply with Chapter 246-260 of the Washington Administrative Code. It is also important to realize that facilities that are used by many people end up with a lot more wear and tear and ultimately require much greater reliability than a typical backyard pool. Using commercial grade equipment is necessary for the longevity, reliability and ease of service of a pool in this type of scenario.

The pool would be a 30x60ft, 60,000 gallon, concrete construction pool with PebbleSheen plaster finish. The pool would feature a sun-shelf approximately 1ft deep at the shallow end the full 30ft width and extend 10ft, then turning into full width stairs stepping down to a 3ft shallow end, sloping to a 6ft deep end. This would be sized to have a maximum capacity of 100 people. The budget also includes 5000-6000 square feet of concrete decking and demolition of the existing pool and expanding the deck and fence on the Southwestern side to for proper sized walking area on each end of the pool.

The pool would be built in compliance to the current Center for Disease Control's Model Aquatic Health Code. The CDC MAHC is the golden standard for pool construction on operation. Typically, states and municipalities pull their standards from the MAHC to base their local codes on. By building to this standard, we can ensure that we are building a swimming pool to the highest standard possible and should ensure it stays in compliance with changing codes in the future for the longest possible time.

I would plan on setting aside at least \$20,000 upfront for a set of plans and engineering for the project and use the produced plan-set for more accurate bidding.

As I mentioned, commercial swimming pools are very different from the standard backyard pool at a single-family residence. As a basic example a standard pump, and filter setup for a commercial pool of this size will be close to the \$50,000 mark. The commercial grade 500,000BTU electric heat pump would be around \$55,000. There will likely be over \$15,000 in pipe and fittings, not including the labor to install it. An automatic cover will be in the \$35,000 range with installation. The electrical work will likely range from \$25,000-\$50,000+ depending on the current available power.

ADA compliant restrooms may end up being a large expense as well. For a 30x60 pool, each restroom should have 2 showers, 2 toilets, and a diaper changing station. There will also need to be a janitors sink and drinking fountain on site. (Which the clubhouse may already have.)



The current pool is approximately 45,000 gallons based on my calculations. By code, the filtration system is required to turn over the water every 6 hours, which would require a 125 gallons per minute of water flow. Your filter is rated for a maximum 100gpm, the pump is likely only capable of about 60gpm in this configuration. Further, the pool appears to be mostly plumbed with a combination of 1.5" and 2" plumbing. The Virginia Graeme Baker Act is a federal regulation passed to limit entrapment from filtration system suction. Part of the VGBA requirements is that at no point on the suction side of the system does the water speed exceed 6 feet per second. 1.5" pipe, can only flow 33gpm at 6fps, which means your plumbing is only capable of about ¼ of the flow required while staying compliant. With the current configuration, it appears that you are over-speeding the plumbing, while still not getting the required amount of filtration turnover necessary, a lose-lose scenario.

The proposed pool at 60,000 gallons, would require a minimum circulation rate of 167gpm. We would utilize at minimum, 4-inch, which is capable of flowing 235gpm at 6fps. This would ensure we greatly exceed the VGBA requirements greatly reducing the entrapment risk. Individual branch lines would be a 2.5-inch or greater on the suction side for skimmers, and 2-inch or greater on the return side for return jets.

The filtration system would consist of a 5-horsepower pump with a variable frequency drive to adjust speed, flow and power consumption, and 2 36" sand filters capable of a combine flow of 300gpm. Also are part of the equipment is a chemical monitoring and feeding system to actively monitor and add chlorine and acid to the water to adjust the chlorine and PH levels. Code does require a pool over 50,000 gallons to have both chlorine and PH control feeding systems. The chemical monitoring and feeding system is a step above the bare minimum required while still being fairly affordable compared to full on large scale commercial chemical control systems for large scale public pools.

The heat pump and circulation pump/variable speed drive require 3-phase commercial/industrial power, which may not be currently on the property.

The heat pump should be capable of raising the water temperature approximately 1 degree per hour, at a cost of approximately \$2-\$3 per hour for the electricity to operate it. For comparison, a similar size commercial grade propane heater will cost approximately half the price, (\$25,000-\$30,000 installed) and will also heat the water at approximately 1 degree per hour but will cost approximately \$16-\$22 per hour for the propane to operate it. You can get larger propane heaters that would allow for a quicker change in temperature, the total use of propane would ultimately be around the same. For a 5-6 month pool season, you could expect around 1000 hours of heating needed to maintain the water temperature in the low 80's. This would be approximately \$2,500 in electricity, or approximately \$20,000 in propane. This is why using a heat pump is so beneficial, the overall operating costs is a small fraction of propane.

With a project like this, most of the cost is not actually from the size of the pool. While the physical size of the pool does make somewhat of a difference, it is not proportional. Dropping from a 30x60 to 25x50 would be about a 30% reduction in size, and likely save less than 10% on the overall cost.



For a project this size, it is recommended that a geotechnical engineering firm survey the site and the ground to ensure the pool is sitting on proper ground and that any ground water issues are addressed. The pool itself will need to have a structural engineering firm design and draw the pool for the building permit. The plumbing system then should be designed by a hydraulic engineering firm to ensure compliance with VGBA and make sure the components are efficiently placed.

Pools in a commercial environment are high maintenance items, so it is best to do everything up front at construction to reduce maintenance requirements. Properly sized filtration, high quality PebbleSheen plaster, hydraulic engineering, chemical automation, all play a large role in what is required day to day to keep the pool operation as simple as possible.

Eastern Washington doesn't seem to have a lot of enforcement in what is required for a pool. What people have and continue to get away with isn't a great indication of what the current requirements are. As a professional company, we cannot cut corners, just because we probably won't get caught. Our goal is to deliver the safest most efficient pool available to you today, unfortunately, in the current world we live in, that ends up costing far more than what the average person would expect.

A project like this is a large job that will take many months to complete and is somewhat weather dependent. For example, the concrete shell needs to be done when the weather is approximately 50 degrees without dipping below 40 degrees. It then requires 30 days of cure time before the plaster finish can be applied. Plaster start-up requires a 28-day process before the pool is ready to be up and open.

With proper planning and availabilities of materials and subcontractors, you could start in the late winter with construction wrapping up in the first part of the summer. These are things that should be considered in the initial planning so that realistic expectations are set. 2023 is possible at this point but be aware that early planning is essential to executing a project on a specific timeline. Delays can mean the whole summer is spent building a pool, just for it to be completed in time for it to be closed for the winter.

Thank you for your consideration of Chinook Pools for your project.

Jon Cyr

