

Green Technology Requirement / Sustainable Design Goals

All publicly funded projects in the State of Oregon are subject to a minimum investment of 1.5% of the overall project (about \$72,000 to \$75,000 in this case) on Green Energy Technology (GET). Typically, for a pool project, this would be used for a direct pool solar hot water collector or a PV solar collection system. This minimum investment is built into the cost estimate presented later in this report.

More importantly, the City of Ashland has adopted a goal of reducing reliance on fossil fuels such as the natural gas that historically has fueled the heating needs for Daniel Meyer Pool. Unfortunately, the lowest cost construction and operational alternative (based on current rates) would still rely on natural gas as the primary source of pool heating energy. Such a pool heating system is included as the basis of the cost estimate presented later in the report.

However, alternatives to this approach are also presented in the Pool Heating Analysis section of this report and include both an all-electric option as well as an electric heat-pump with back-up natural gas or back-up electric heating options. Rough construction and operational cost are presented for comparison.

It should be noted that the 1.5% GET requirement is a minimum investment for a solar system that will reduce overall energy costs to some degree. Larger investments in such systems would yield greater savings under each of the heating options studied, but such technologies cannot be relied upon to meet all energy needs (no matter how large the collector) for a facility that is operated through the winter months.

Solar Contribution

As noted earlier this publicly funded project is subject to the State mandate requiring that a minimum of 1.5% of the overall budget (about \$72,000 to \$75,000 in this case) be spent on Green Energy Technology, which for a pool project would typically be used for a direct pool solar thermal/hot water collector or a solar photovoltaic power generation system.

The potential exists for a greater investment in site based solar thermal heating or power generation to meet a practical portion of pool, domestic water and building heating needs in order to offset costs of other energy sources. Basically, investing in solar for thermal heating or power generation will reduce energy consumption. However, it will not reduce the required design capacity of the heating systems for required for peak load conditions. Additionally, in the case of Option 3A/3B where an electric heat pump chiller is used as the primary heating source, this will have limited effect on the amount of natural gas or power consumed as a back-up to meet peak needs in the winter months during periods when solar is not available.

The site is limited in area and opportunities for proper installation and orientation of solar systems may require the use of additional structures (e.g., shade structures over pool deck or parking) for installation of effective arrays resulting in increased first costs and reduced cost benefit. Optimizing the size, cost and type of solar thermal heating or power generation system will require more detailed study as the project progresses.