



Spruce Lodge Hot Water Heating System Replacement

Background / The Problem: In 2024, technicians from Deerpark Oil informed us that the hot water tank in the Spruce Lodge Hot Water Heating System is in a condition of imminent failure due to sediment and corrosion. They also pointed out that the boiler in this same system has significant issues. Also, the system currently relies on a temperature-sensitive mixing valve to add cold water to the dangerously hot kitchen supply (180 deg) for guest use at sinks and showers. The technicians pointed out that these types of valves are not reliable as scald-prevention devices.

In addition to these problems, in 2025, Deerpark Oil discovered a growing leak in the current fuel oil tank serving this system. This prevents the tank from being properly filled and may lead to an environmental risk if not contained.

A similar heating oil boiler and hot water tank system was replaced 2023 at House 1 for about \$8000 including plumbing and labor.

Opportunity: As a guest-service area, Spruce Lodge represents an excellent location for an on-demand hot water system similar to those Camp has been installing elsewhere (Promise Woods, Motel 1, House 5). Guest-service areas see use primarily on the weekend, so systems that heat hot water (standby heating) to keep temperate all week while the building is not being used waste resources. On-demand systems only run when needed, are more efficient when they do run, and take less to maintain, making total cost of ownership lower and multiplying stewardship benefits.

- A new liquid propane-fired system using two on-demand condensing tankless water heaters will cost approximately \$4,100 completely installed – half the cost of replacing the current system.
- By installing two independent heaters, we will increase guest safety by preventing scalding.
- The overall cost savings to operate this type of on-demand system should be at least \$124 per year less than the current system, saving an additional \$2,480 over the 20-year life of the system.
- Eliminating the standby heating of a tank system can save 24-35% on heating costs and emissions. Our use scenario may mean even more savings.
- Switching to propane over heating oil may save as much as 28-40% of carbon emissions and eliminate other types of toxic emissions like sulfur dioxide.

By replacing the failing system using this strategy, we can save camp as much as \$6,480 over the next 20 years and increase our efficiency by up to 50-70%.

Budget

(2) Navien 210A Condensing Tankless Water Heaters	\$3600
LP Gas Service Installation	\$200
Plumbing Fittings & Pipe	\$300
Labor (~16 hours)	CDP Staff
Total	\$4100

Budget Progress: currently \$3,000 have been raised for this project, leaving \$1,100 remaining.

Project Milestones

- ☒ Begin project fundraising.
- ☒ Evaluate space and layout for new system.
- ☒ Spec new system and provide spec to propane service provider.
- ☐ Propane service site inspection.
- ☐ Complete project fundraising.
- ☐ Purchase and install system.
- ☐ Track system performance and integrate with Maintenance Calendar.

Updated: 082225 17:27

URL: <https://campdeerpark.org/kb/spruce-lodge-hot-water-heating-system-replacement/>