

# Energy and Water Efficiency Checklist for Camps and Retreats



Grab a clipboard and take this checklist along as you discover opportunities to increase energy and water efficiency at your camp/retreat. Note that due to the many operating characteristics of camps and retreats, some sections may not apply to your property. This checklist is applicable to for-profit and non-profit operations as well as religious camps/retreats.

For this checklist, focus on uncovering opportunities to save. When you find something, make notes about location, tools, materials, expertise, needed, or further research required. Feel free to add to or modify this list to suit your own needs.

Date \_\_\_\_\_



## Facility Management and Benchmarking

- Managing costs starts with knowing your baseline use. Start by printing a Data Collection Worksheet at [https://portfoliomanager.energystar.gov/pm/dataCollection Worksheet](https://portfoliomanager.energystar.gov/pm/dataCollectionWorksheet). This Worksheet will list all you need to benchmark your property in the free, online ENERGY STAR Portfolio Manager® tool for energy use, water use, and recycling/materials management.
  - There are data collection worksheets for many property types. Depending on the operations of your property, you may choose to include some or all of the following: social meeting hall, residence hall/dormitory, hotel, worship facility, and more. The data collection worksheet can include multiple property types as well as additional items such as swimming pool, parking lot lighting, kitchen, and food services areas.
  - For those properties that include swimming pools, the hotel data collection worksheet has a swimming pool addition to include details on the pool. This ensures that the swimming pool-related energy use (water pump, heating, etc.) is included in your Portfolio Manager account.
- With the data collection worksheet in hand, collect property use data as well as utility bills in preparation to set up a Portfolio Manager account.
- Create an account at [portfoliomanager.energystar.gov/pm/signup](https://portfoliomanager.energystar.gov/pm/signup).
- Learn more at [www.energystar.gov/benchmark](https://www.energystar.gov/benchmark) and find all Portfolio Manager training and tech support at [www.energystar.gov/buildings/training](https://www.energystar.gov/buildings/training).
- Educate and encourage employees and guests to report leaks, turn off lights not in use, recycle and support your environmental stewardship efforts. Camps and retreats host many guests throughout the year. Showcase your commitment to energy and water efficiency throughout your communications.

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- Adopt a purchasing/procurement policy that specifies EPA's ENERGY STAR, WaterSense® and Safer Choice® labeled products when applicable.
- Learn how reducing, reusing, and recycling can help your camp/retreat and the environment by saving money, energy, and natural resources at <https://www.epa.gov/recycle>.



## Lighting

- Evaluate the opportunity to upgrade to more energy- efficient lighting options:
  - Update lighting from incandescent or halogen bulbs to high-lumen LED equipment. This will save money and improve safety and durability. Solid state LED lights are resistant to impacts.
  - Replace T12 fluorescents and obsolete magnetic ballasts, ideally with tubular LEDs (TLEDs). Retain existing T8s or T5s with electronic ballasts through their useful life.
  - Connect with your utility to learn more about the resources and support they can provide.
- During daytime and evening hours, identify where lights have been left on in unoccupied spaces (including offices, restrooms, storage, guest rooms/cabins, hallways, etc.).
- During the day, look for “day-burners” – that is, exterior and parking lot lighting that is on and should only be on at night, and which has a failed or dirty light sensor.
- If upgrading your exterior lighting, consider shielded fixtures to direct the light where needed and reduce light pollution.
- Identify and assess opportunities to use automated lighting controls:
  - Occupancy/motion sensors for low-traffic areas.
  - Timers or daylight sensors to turn off exterior and parking lot lights during the day.
  - Dimming controls in locations where natural lighting (e.g., near windows, skylights, light tubes) can temporarily supplement or replace fixture lighting.
- Confirm that lighting controls are installed to “see” what they must and are operating as intended.
- Assess cleanliness of lamps/fixtures (dust, bugs, any debris) and the need to institute a regular cleaning plan for maximum light output.
- Identify where adding reflectors can amplify existing lighting.

*TIP: Consider an “all utility audit” to look for billing errors and proper rate classification for electricity, natural gas, heating oil, water/sewer, and telecommunications. The auditing firm is paid a pre-agreed percentage only after your refund is complete. If there is no refund due, you have confirmed you are not overpaying.*

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- Consider purchasing an inexpensive light meter (under \$30) to assess whether any areas are over-lit, compared to requirements or design levels.
- Consider opportunities for de-lamping, and de-energize and/or remove ballasts that are not in use.
- Review ENERGY STAR product information, calculators and find local retailers and rebates at [www.energystar.gov/products](http://www.energystar.gov/products) and find lighting, fans, and more lighting facts at [www.energystar.gov/lighting](http://www.energystar.gov/lighting).



## Building Envelope

- Inspect doors and windows to identify gaps or cracks that can be weather-stripped, caulked, or filled with foam insulation.
- If in the market for new windows, consider high-efficiency options that may cost more up front but offer reasonable pay-back.
- Try to keep closed doors to the outside and to any unheated or uncooled areas.
- Consider installing solar film, awnings, vegetation, or insulated curtains for east and west windows to block summer heat gain. Ensure solar gain in the winter through south-facing windows.
- Consider strategic landscaping to save on water bills and cooling in the summer and heating in the winter. See tips and information at <https://www.epa.gov/watersense/outdoors>.
- Inspect attic insulation levels and address any inadequacies. Add insulation as necessary if remodeling.
- Check on the roof, note and take photographs of and address any damage, including cracked shingles or other surface aging. In the attic, look for signs of leaks, membrane cracks/holes, or damaged insulation.
- Consider that white, reflective paint can significantly reduce heat gain and extend the life of some roofing.



## Heating, Ventilation and Air Conditioning (HVAC)

- Ensure HVAC system components are being maintained regularly by qualified staff or under an annual maintenance contract to “tune-up” HVAC systems both pre-heating and pre-cooling seasons.
- Also remember to:
  - Regularly replace HVAC filters as needed during the heating and cooling seasons.

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- Ensure free airflow to and from supply/return registers (clear furniture, books, papers, or other materials).
- Keep electronics and heat sources away from thermostats.
- Use window shades/curtains to block excess heat and educate staff about when to use them.
- Ceiling and personal fans can help with energy savings by making cabins and rooms feel cooler during summer months. A smart thermostat can be programmed to pre-cool or pre-heat spaces for comfort an hour prior to occupation. Avoid heating/cooling unoccupied spaces.
- Identify and discontinue the use of personal heaters in spaces that already have HVAC equipment. The use of personal heaters may indicate broader issues that should be addressed at the system level.
- Depending on outside temperature, set programming to turn off the HVAC 15-30 minutes before space use ends.
- Use “smart thermostats” and a temperature setback policy for heating/ cooling when the building is unoccupied (including any special considerations for summer/winter months).
- Have a plan for HVAC failures. Right size new systems by having contractors quote equipment based on high efficiency levels and reduced demand. Do not buy a larger system than you need.
- Where electricity is the fuel of choice, consider heat pumps or solar for water heating. Heat pumps cost much less to operate than electric resistance heating and even some gas heating units. Where gas is used for water heating, look for a minimum 8% boiler annual fuel use efficiency (AFUE).
- Maintain boilers regularly, checking for combustion efficiency and sediment.
- See ENERGY STAR HVAC products and resources at [https://www.energystar.gov/products/heating\\_cooling](https://www.energystar.gov/products/heating_cooling).

*TIP: Celebrate your success and recognize contributors. Also help your employees and guests achieve savings at home by referring them to [www.energystar.gov/campaign/home](http://www.energystar.gov/campaign/home), and at customers' workplaces with <https://www.energystar.gov/smallbiz> and <https://www.energystar.gov/work>.*



## Equipment/Plug Load

- For office equipment that needs replacing, consider ENERGY STAR certified options using the online savings calculators and available rebates at <https://www.energystar.gov/products>.
- Turn off equipment left on overnight unnecessarily (including equipment left in sleep/idle or screen saver mode).
- Ensure that power management settings are activated on common area equipment such as TV monitors, printers, and copiers.

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- Use advanced power strips for easy power disconnect.
- Train staff and campers/guests to unplug rechargeable devices once charged.
- Use timers to turn off vending machines or put in sleep mode at the end of the day. In the alternative, install motion/occupancy-based vending machine controls.
- Review ENERGY STAR office products and resources at [https://www.energystar.gov/products/office\\_equipment](https://www.energystar.gov/products/office_equipment); see ENERGY STAR vending machines at [https://www.energystar.gov/products/other/vending\\_machines](https://www.energystar.gov/products/other/vending_machines), and water coolers at [https://www.energystar.gov/products/other/water\\_coolers](https://www.energystar.gov/products/other/water_coolers).
- Identify any new common area laundry appliances that will be needed soon; make plans to ensure they are ENERGY STAR certified where possible.



## Kitchen and Food Service Areas

- When purchasing new kitchen equipment, review ENERGY STAR models, calculate savings and find rebates in advance. All food service equipment is available at [https://www.energystar.gov/products/commercial\\_food\\_service\\_equipment](https://www.energystar.gov/products/commercial_food_service_equipment).
- Avoid placing heating equipment near cooling equipment.
- Verify oven thermostat accuracy and recalibrate if necessary.
- Establish operating procedures for cooking/baking equipment (for instance, preheating only when necessary, turning down/off equipment when not in use).
- Ensure that range hoods and exhaust fans are only running when the range is being used.
- Identify and assess opportunities to install variable frequency drives (VFDs) on kitchen hoods.
- Ensure that unused appliances are unplugged or on a power strip that is shut off.
- Determine if low-flow pre-rinse spray valves can be installed.
- Identify major water uses. Find and fix any leaks—especially of hot water. Monitoring your water use in Portfolio Manager helps you establish baselines of water consumption and monthly use. Overall monitoring also helps provide a real-time response to water leaks and issues.

# Energy and Water Efficiency Checklist for Camps and Retreats



- Set water temperature 110 – 120 degrees or per local code to prevent scalding and save energy and money.
- See EPA's WaterSense® program for water saving labeled products and rebates, for indoor/outdoor water efficiency tips, and best practices at [www.epa.gov/watersense](http://www.epa.gov/watersense).
- Offer guests water, but don't serve water unless requested. Consider offering branded reusable water bottles, water bottle filling stations, adding water bottle to the packing list for guests/campers.
- Ensure that unused refrigeration units are turned off.
- Check for unusual noise or vibration from compressors and motors as this may indicate a decrease in performance.
- Assess plans for regularly cleaning refrigeration coils.
- Identify worn and/or leaky door seals/gaskets on refrigerators and freezers. To test, close a door on a piece of paper; if easily pulled out, replace the gasket.
- If your kitchen has any residential type refrigerators (staff area, camp rooms), consider replacing these if they are more than 9-10 years old.
- Dispose of old refrigerators properly. See the EPA's Responsible Appliance Disposal (RAD) Program at <https://www.epa.gov/rad>.
- Reduce food waste in the dining hall/restaurant; see EPA's resources on reducing food waste at <https://www.epa.gov/sustainable-management-food/tools-preventing-and-diverting-wasted-food>.
- Consider setting up a composting program for food waste. Learn more about creating a compost program at <https://www.epa.gov/sustainable-management-food/reducing-impact-wasted-food-feeding-soil-and-composting>.



## Renewable Energy Options

- Consider installing renewable energy for onsite generation at your property. EPA's Green Power Partnership (GPP) has a toolkit on renewable energy feasibility assessments at <https://www.epa.gov/greenpower/conducting-site-and-economic-renewable-energy-project-feasibility-assessments>
- Look into participating in a utility program that offers renewable energy purchase options.



## Water: Interior Hot and Cold

- Survey water use to identify major uses; find and fix any leaks—especially hot water leaks.

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- Typically, set temperature 110 – 120 degrees or per local code to prevent scalds and to save energy and money.
- Consider “tankless” heaters (on-demand) for low-use areas or if you have a number of cabins/sleeping areas with individual water heaters.
- Insulate 7-year or older water heaters and the first 3’ of heated water “out” pipe.
- Check out ENERGY STAR water heating product information and calculators; find local retailers and rebates at [www.energystar.gov/products/water\\_heaters](http://www.energystar.gov/products/water_heaters).
- Evaluate opportunities for installing low-flow showerheads and faucet aerators.
- Evaluate opportunities for installing high-efficiency toilets and urinals.
- If you have hot tubs, cover after use to reduce heat loss and maintain cleanliness.
- If you have a pool, review ENERGY STAR certified swimming pool pumps at <https://www.energystar.gov/productfinder/product/certified-pool-pumps/results>.
- See EPA’s WaterSense® program for water saving labeled products and rebates, for indoor water efficiency tips, and best practices at [www.epa.gov/watersense](http://www.epa.gov/watersense).



## Water: Exterior Savings

- See EPA’s WaterSense® program for water saving labeled products and rebates, for outdoor water efficiency tips, and best practices at [www.epa.gov/watersense](http://www.epa.gov/watersense).
- Survey water use to identify major uses; find and fix any leaks—especially with irrigation.
- Water-efficient irrigation products and practices—such as native plantings, water budgeting, seasonal scheduling, or WaterSense labeled weather-based irrigation controllers—could cut the amount of water lost outside by as much as 50 percent.
- Consider xeriscaping, or dry, gardens that use rocks and succulents to reduce or eliminate the need for irrigation.
- Read and download EPA’s Saving the Rain: Green Stormwater Solutions for Congregations at [www.epa.gov/nps/saving-rain-green-stormwater-solutions-congregations](http://www.epa.gov/nps/saving-rain-green-stormwater-solutions-congregations). This guide has information for many different types of applications and not only for worship facilities.