

**Grab a clipboard and take this map along on your treasure hunt.** Focus on uncovering opportunities to save. When you find something, make notes about location; tools, materials, or expertise needed; or further research required. Feel free to add to or modify this list to suit your own needs.

Facility Name \_\_\_\_\_ Floor \_\_\_\_\_ Date \_\_\_\_\_ Team \_\_\_\_\_



## Facility Management

- Make note of your EUI and ENERGY STAR® Score in Portfolio Manager.
- Ensure that facility energy management plan and operations & maintenance plan is up to date and that appropriate staff have reviewed the latest versions.
- Review building management system (BMS) and/or building automation system (BAS) code to ensure that specific commands to reduce unneeded energy consumption (e.g., on/off times) have not been overwritten.



## Lighting

- Identify where lights have been left on in unoccupied spaces.
- Identify and assess opportunities to use automated lighting controls:
  - Occupancy/motion sensors for low-traffic areas.
  - Timers or daylight sensors to dim or turn off exterior and parking lot lights during the day.
  - Dimming controls in locations where there is natural lighting (e.g., near windows, skylights, light tubes).
- Confirm that installed lighting controls are operating as intended.
- Assess need to institute a regular cleaning plan for lamps/fixtures for maximum light output.
- Identify where reflectors can be practically added to existing lighting.
- Assess whether any areas are over-lit, compared to requirements or design levels; consider opportunities for de-lamping.
- De-energize and/or remove ballasts that are not in use.

NOTES:



- Evaluate the opportunity to upgrade to more energy-efficient lighting options:
  - Replace T12 fluorescents with T8s or T5s with electronic (rather than magnetic) ballasts; consider the use of tubular LEDs (TLEDs).
  - Upgrade incandescent and CFL applications to LED (especially for task lighting or specialty/decorative applications).
  - Use LED Exit signs in place of incandescent or CFL models.
- Consider making operating room lighting fully dimmable to provide flexibility in lighting levels required during preparation, procedures, and clean-up.

## NOTES:



### Building Envelope

- Inspect doors and windows to identify gaps or cracks that can be repaired.
- Note damaged or missing weather stripping.
- Note air leaks that should be sealed with caulking or other sealant.
- Inspect insulation levels and identify inadequacies to be addressed.
- Close doors to the outside and to any unheated or uncooled areas.
- Assess the opportunity to install solar film or other window coverings on east, west, or south exposures to reduce solar heat gain and heat loss.



### Equipment/Plug Loads

- Identify any new equipment (e.g., TVs) in patient rooms and waiting rooms that will be needed soon, and make plan to ensure they are ENERGY STAR certified where possible.
- Identify any new office equipment that will be needed soon; make plan to ensure they are ENERGY STAR certified where possible.
- Identify any equipment left on overnight (including those left in sleep/idle or screen saver mode).
- Ensure that power management settings are activated on office equipment such as computers, monitors, printers, and copiers.
- Identify where power strips can be used for easy disconnect from power source. Consider the use of advanced power strips.





## Kitchen/Cafeteria and Food Service Equipment

- Establish operating procedures for cooking/baking equipment (for instance, preheating only when necessary, turning down/off equipment when not in use).
- Verify oven thermostat accuracy and recalibrate, if necessary.
- Identify worn and/or leaky door seals/gaskets on refrigerators and freezers.
- Make plan to regularly clean refrigerator coils and keep free of obstructions.
- Identify where low-flow pre-rinse spray valves can be installed.
- Ensure that range hoods and exhaust fans are only running when the range is being used.
- Identify and assess opportunities for demand-controlled ventilation.
- Identify and assess opportunities to install variable frequency drives (VFDs) on kitchen hoods.
- Identify and assess opportunities to use ENERGY STAR certified commercial food service equipment.
- Check if vending machines get turned off or put in sleep mode at the end of the day. Consider installing motion/occupancy-based vending machine controls.
- Look for opportunities to replace older vending machines with new ENERGY STAR certified vending machines.

NOTES:



## HVAC

- Identify and make plans to address instances of simultaneous heating and cooling.
- Ensure that thermostats and outside air temperature sensors are properly calibrated/maintained.
- Ensure that thermostats are set to appropriate temperatures based on season and local weather conditions.
- Confirm proper implementation of a temperature setback policy for heating/cooling unoccupied areas.
- Perform testing and balancing of air and water systems.
- Ensure free airflow to and from registers.
- Ensure window shades are available to block excess heat gain. Make plan to educate staff about when to use them.



- Monitor make-up air ventilation; ensure the proper functioning of dampers to achieve outside air requirements.
- Assess the opportunity to use air-side economizers so outside air can be used for “free cooling.”
- Ensure that HVAC system components are being maintained regularly, including:
  - Replace filters on a regular schedule.
  - Inspect and clean evaporator and condenser coils.
  - Clean fan blades and adjust belts as needed.
  - Inspect water/steam pipes and ducts for leaks and/or inadequate insulation; address as needed.
  - Verify and calibrate operation of variable air volume (VAV) boxes, where applicable.
  - Evaluate furnace/boiler efficiency and clean/tune up as needed (including boiler water treatment and inspection of steam traps).
  - Check chiller and cooling tower components for fouling or corrosion; ensure proper water treatment is in place.
  - Check for unusual noise, vibration and/or decrease in performance of compressors/motors.
- Evaluate how chillers operate during the cold months and determine if chiller or pumps can be shut off.
- Identify and assess opportunities for installing variable frequency drives (VFDs) for fan and pump motors, and variable air volume (VAV) boxes in the ductwork – especially where variable loads are being served.
- Consider expansion of building automation system (BAS) to optimize performance of air handlers, boilers, chiller plant, fan/pump speed controls, hot water systems, humidity control, and VFDs.
- Explore the possibility to establish separate HVAC zones for spaces with similar requirements (e.g., airflow, temperature and humidity control); to potentially allow reductions in air changes and more appropriate temperature/humidity setbacks.
- Identify and assess opportunities for heat recovery.
- Confirm total building is under positive pressure to avoid air infiltration.
- Evaluate part-load performance conditions to optimize operation for the staging and warm-up of boilers and chillers.

**NOTES:**



- Reduce the number of operating room air changes per hour (within applicable standards), depending on whether operating rooms are occupied or unoccupied.
- Check underground parking garage ventilation systems for operation during unoccupied times.
- Assess the opportunity to install carbon monoxide monitoring/control for garage ventilation systems.



## Information Technology (IT)

- Consider your IT needs and what IT operations could be moved to a co-location facility or to a private or public cloud.
- Identify if there are active servers that are unused or heavily underutilized that can be removed.
- Check the temperature of your data center to ensure you are within the ASHRAE recommended operating temperature and humidity.
- Institute an ENERGY STAR purchasing policy for IT equipment.
- Ensure that you are using variable speed fans rather than standard fans.
- Assess if the IT department implements a virtualization strategy in their servers, as appropriate.
- Determine if the appropriate air containment and other enclosure hardware is installed to properly separate cooler intake air from warmer exhaust heat.

### NOTES:





# Treasure Map FOR HOSPITALS

**ADDITIONAL NOTES:**

