DRINKING WATER TREATMENT FACILITY
ENERGY CHECKLIST

Hawaii Energy
YOUR CONSERVATION & EFFICIENCY PROGRAM

HOW TO USE THIS CHECKLIST: Energy costs are a significant and growing burden on operating budgets at small treatment facilities nationwide. At small water treatment facilities this energy use is typically concentrated in the pumping and disinfection systems. Use this Checklist to assist in highlighting potential energy savings at your facility. Email this checklist to your local Hawaii Energy representative at the address below with your results to learn how your facility can start saving energy and money, and what incentives and other resources we have to offer.

DISCLAIMER: This Checklist is an informational tool. Submitting the completed Checklist to Hawaii Energy entails no commitment on the part of yourself or your facility to make process or operations changes. Consult with a professional engineer prior to making process changes that may impact drinking water quality or public health. This Checklist was developed by CEE with help from engineering professionals.

1. PLANT & SYSTEM INFORMATION

A. Please provide plant flow rates for all water sources at design, peak and winter average conditions

	Wells	Pumped Surface Water	Gravity Surface Water
Design			
Peak			
Winter Avg.			

B. Treatment process (check all that apply)

Slow Sand Filtration	Package Filtration	Mixed Media	Membrane Filtration	Other
☐	☐	☐	☐	☐

C. In the table to the right, please provide information on pump use at your facility, by pump type (raw/finished water pumps, booster pumps, backwash pumps). For each type please provide total pump horsepower, horsepower usually operating, annual hours of use, and method used to control pump output, if any (e.g. recirculation, throttling, variable speed drive)

	HP Total	HP Operating	Annual Hours	Control
Raw Water				
Finished Water				
Booster				
Backwash				

D. When was the last time your pumps were tested for energy efficiency?

E. Is the majority of your motors NEMA Premium® efficiency? ☐ Yes ☐ No

F. Do you receive and review the facility's electric and gas bills? ☐ Yes ☐ No

2. IN-PLANT PUMPING

	Yes	No
A. Do you have raw water pumps? (include # of pumps and total pump hp, as above, in Comments box to right)		
B. If yes, are any of these pumps not operating at their design flow and head?		
C. Are any of these pumps throttled to adjust flow rate?		
D. Do you have variable speed control on raw water pumps?		
E. Do you have finished water pumps? (include #, total hp, as above)		
F. If yes, are any of these pumps not operating at their design flow and head?		
G. Are any of these pumps throttled to adjust flow rate?		
H. Do you have variable speed control on finished water pumps?		
I. Are finished water pumps operated mainly during off-peak hours?		
J. Do you use in-system storage to minimize peak-hour pumping?		

Comments

3. TREATMENT PROCESS

	Yes	No	Comments
A. Do you use membrane or pressure filtration?			
B. Do you use backwash pumps?			
C. Do you use an ultraviolet disinfection system?			
D. If yes, does the UV system use low-pressure, high-output lamps?			
E. Do you use centrifuges for dewatering residuals?			

4. BOOSTER PUMPING – RESERVOIR TO RESERVOIR

A. Do you have booster pumping stations to move water from one reservoir to another? (include # of stations, # of pumps, total hp at each station)			
B. If yes, are any of these pumps not operating at their design flow and head?			
C. Are any of these pumps throttled to adjust flow rate?			
D. Do these pumps have variable speed control? If yes, please explain.			

5. BOOSTER PUMPING – RESERVOIR TO CLOSED SYSTEM

A. Do you have booster pumping stations that move water from one storage reservoir to a pressure zone w/o a storage reservoir? (include # of pumps, stations, & total hp)			
B. If yes, are any of these pumps allowed to run continuously w/o controls?			
C. Are any of these pumps throttled to adjust flow rate?			
D. Do any of these pumps have variable speed control?			
E. Are any of these pumps sized to meet maximum daily flow (vs. avg. day flow)?			
F. In your distribution system, do any pressure zones operate at pressures greater than 65 psi? (please provide operating pressure and reason necessary)			

6. OTHER

A. Has your plant undergone any energy improvement projects in the past 5 years?			
B. Is or will your plant be undergoing renovation to comply with permitting requirements or to meet capacity needs?			
C. If yes, are energy conservation measures included as part of this renovation?			
D. Do you have a backup generator capable of powering your facility?			

Do you have ideas or plans that could improve the operating efficiency of your facility? Please Provide them below:

Contact Information

Your Name: _____

Facility Name: _____

Facility Address: _____

Email Address: _____

Phone Number: _____

FOR MORE INFORMATION ON ENERGY CONSERVATION AT YOUR WASTEWATER TREATMENT FACILITIES, CONTACT JOE SIMPKINS AT HAWAII ENERGY AT (808) 848-8581 EMAIL YOUR COMPLETED CHECKLIST TO AURILIOK@LEIDOS.COM.