

## Facility Overview

### Facility Description:

June Lake Public Utility Department (JLPUD) provides potable water and wastewater to the June Lake Loop region.

**Potable Water System:** JLPUD serves the June Lake Village and Down-Canyon from Snow-Creek diversion facility and June Lake intake with a filtration plant, lake intake and storage tank. Filtration involves AD92 Anion Exchange Tanks.

**Wastewater Treatment Plant (WWTP):** JLPUD provides sewerage service to June Lake Village, Down-Creek and USFS Tracts. There are 2 main lift stations, one in the Village and the other in the Down-Creek area. These lift stations carry the sewerage to the WWTP located off Highway 395. This system was constructed in 1970. The WWTP treats domestic wastewater. The WWTP was constructed in 1974 and is designed to treat 1.0 million gallons per day (MGD) and currently treats an average of 0.15 MGD. Flow varies between 0.0 MGD and 0.31 MGD between winter and summer.

The WWTP site is approximately 22 acres of which three (3) acres are used for the treatment process and 19 acres are used for effluent disposal by evaporation. The treatment process includes:

- **Oxidation Ditch:** A concrete-lined elliptical shaped above ground open to atmosphere pond where raw wastewater is aerobically digested.
- **Primary Clarifier:** A circular covered concrete structure that removes settleable solids from wastewater downstream of the oxidation ditch.
- **Evaporation Ponds:** Effluent is disposed in the ponds, where effluent evaporates. There are four (4) ponds where effluent can be discharged. Only one (1) pond is needed at a time to dispose of daily treated effluent.
- **Sludge Drying Beds:** There are seven (7) sludge drying beds where activated sludge from the oxidation ditch is dewatered. Dewatered sludge is removed from the drying beds by front-end loaders or backhoes and disposed of in designated disposal areas.

## Energy Benchmarking

Utility bills of 2019 of JLPUD accounts were shared. There are 20 service addresses with 31 meter numbers covering all offices, pumping stations, the potable water treatment plant, lifting stations and the wastewater treatment plant. JLPUD consumes 560,133 kWh in 2020 with an average 46,678 kWh monthly amounting \$7,166 per month. An estimated energy benchmark has been developed using available utility data, potable water production data and wastewater influent data. Energy consumption distribution is created using industry standard practice and standard assumptions.

### June Lake PUD - Benchmarking

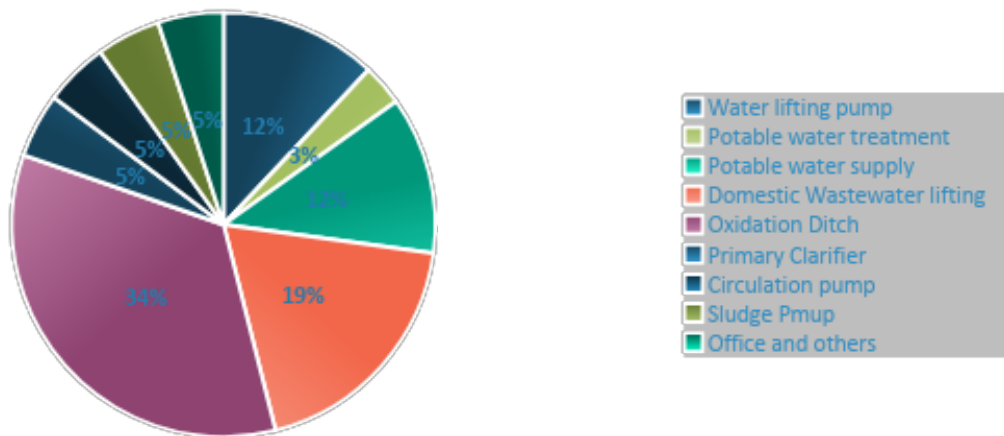


Figure 1: Energy Use Breakdown

### Savings Estimate

Actual equipment data were not available during this estimation. Estimation is done based on available information from the JLPUD website, board meeting agenda, Google maps data and utility bills. It is assumed that the facility is operating with original equipment with minimal replacement. All savings are mutually exclusive. All savings are only for estimation purposes. An estimated 32% kWh savings is expected from the possible measures.

Facility	Breakdown	High Level Measures	Saving %	Saving kWh	Saving \$
Potable Water Supply	Water lifting pump	Improve pumping technology	15%	10,082	1,548
	Potable water treatment	Improve potable water treatment	10%	1,763	271
	Potable water supply	Improve pumping technology	15%	10,082	1,548
WW Lifting	Domestic WW lifting	Improve pumping technology	15%	15,884	2,438
WWTP	Oxidation Ditch	Implement non-buoyant oxygenation	60%	115,152	17,677
	Primary Clarifier	Install energy efficient equipment, drive, and control	10%	2,742	421
	Circulation pump	Install energy efficient equipment, drive, and control	15%	4,113	631
	Sludge pump	Install energy efficient equipment, drive, and control	15%	4,113	631
	Office and others	Install energy efficient lighting and control	60%	16,804	2,580
<b>TOTAL</b>				<b>180,734</b>	<b>27,745</b>

## Energy Efficiency Measures

1. Install high efficiency pumps for lifting water
2. Install premium efficiency motors with lift pumps
3. Install variable speed drive with pumps
4. Install high efficiency pumps for distributing water
5. Install premium efficiency motors with distribution/booster pumps
6. Install variable speed drive with distribution/booster pumps
7. Install high efficiency pumps for lifting wastewater
8. Install premium efficiency motors with wastewater lift pumps
9. Install variable speed drive with wastewater lift pumps
10. Install SCADA operating system for all pumping stations and treatment facilities
11. Install non-buoyant oxygenation in collection system
12. Install non-buoyant oxygenation in replacing surface aeration in aeration pond
13. Install high efficiency clarifier
14. Replace circulation pumps with high efficiency pumps
15. Install high efficiency motors on circulation pumps
16. Install variable speed drive on circulation pumps
17. Replace sludge pumps with high efficiency pumps
18. Install high efficiency motors on sludge pumps
19. Install variable speed drive on sludge pumps
20. Install dual DO monitoring system to optimize system operation
21. Install energy efficient lights and controls in offices and premises

### Reference:

No Discharge Technical Report-June Lake Public Utility District

Electric Utility Bills

JLPUD – Board Meeting Minutes