

Water District Cost Structure and Cost Allocation

Why are water and sewer costs so high in Serene Lakes?

Donner Summit is a challenging and costly location to provide drinking water and sewage processing. For example:

- Both Federal and California environmental regulators have placed very rigid standards on the cleanliness of the effluent of the Donner Summit PUD wastewater treatment plant because it flows directly into the headwaters of the Yuba River. The output of the plant is not permitted to degrade the purity of the river, which is fed by snow-melt and mountain springs.
- During the summer, when river flows are minimal, the DSPUD must spray its effluent onto the Soda Springs Ski Area instead of discharging it into the river.
- The long, cold winters make it difficult to use industry-standard biological processes to treat wastewater, because they depend on micro-organisms that do not reproduce and thrive well in very cold water. In the upgraded wastewater treatment plant, DSPUD will be using propane heaters to warm the sewage to temperatures where the micro-organisms are efficient and effective – to meet the challenging new standards required by the State.
- The heavy snow-loads and extended storms are hard on the physical plants, making them more expensive to run and to maintain. Construction seasons are short, adding costs.
- The variability of loads from weekdays to weekends and from low seasons to high seasons makes operating the system (especially the wastewater treatment plant) much more complex and costly. During the fall, the sewage load falls so dramatically that the microbes would die off because there is not enough “food” to nourish them. To prevent this, the plant must incur significant extra costs by adding “food,” in the form of ammonia, to keep the microbe population at a level that can handle the seasonally high loads typically experienced on weekends at Christmas, New Year’s Day, and the height of the ski season.
- There are just not enough residences and commercial users on the Summit to support processing plants with the economies of scale enjoyed by communities off the mountain. The Water District has explored linking up with the Truckee Sanitation District, but that proved infeasible and was not attractive to Truckee in any case.

If you have not already done so, it would be informative for you to take a look at the wastewater treatment plant we share with the Donner Summit PUD. It’s located at Donner Pass Road and Sherritt Lane, just north of the I-80 overpass at the Soda Springs exit.

What is the cost structure of the Sierra Lakes County Water District?

The provision of water and sewer services is very capital intensive. That is, most of the costs involve the financing, maintenance, and repair of the physical system, including the water intake and treatment plant, the water distribution system, the sewage collection system, and

our share of the wastewater treatment plant. In addition to the costs of operating and maintaining the system, the facilities must be sized so that they can handle peak capacity demand when required.

The staff is largely focused on ensuring that the plant is operating properly and that the Water District is meeting the needs of its customers, complying with relevant laws and regulations, implementing appropriate accounting standards and cost controls, and responding to problems that need immediate attention.

As a result, about 90% of the total costs incurred by the Water District are fixed. That is, they do not go up or down as the load on the system varies. The added cost of processing additional water and sewage within the capacity of the system is minimal.

How does this affect the way ratepayers are charged?

Some have suggested that the Water District should install water meters for each user and charge fees based on usage. This is primarily a proposition put forth by second-home owners, who perceive that full-time residents receive far more services for their annual fees. It is understandable that they would feel this way.

But, as stated earlier, the cost structure of the District is largely driven by the requirement to provide peak capacity when it is needed. That is, when Christmas, New Year's, Presidents' Day, and the Fourth of July arrive, the population of Serene Lakes increases by a factor of four or five. The District cannot allocate capacity among part-time ratepayers. When you arrive for a holiday weekend, you expect to be able to turn on your faucets and flush your toilets – even though that extra plant capacity is utilized only a few times per year.

So, yes, full-timers use more water and sewer services at a modest additional variable cost. But, basing ratepayer fees primarily on water usage would be highly inconsistent with the underlying drivers of the District's costs. Moreover, to the District's benefit, the full-timers deliver a relatively stable base-load volume to the water and sewer plants that helps keep them in healthy operation during periods of low occupancy and that is relatively easy and inexpensive to process.

Furthermore, part-timers put costly demands and strains on the system that are not widely understood. For one, the new sewer plant needed to be sized (storage tanks, bioreactor tanks, pipes, pumps, UV disinfection, etc.) to handle peak capacity periods, even though they will be operated at a fraction of that level for most of the year. The process technology designed into the new wastewater treatment plant is state-of-the-art, and is necessary to meet increasingly restrictive California wastewater discharge standards amid wildly fluctuating demand cycles in a harsh environment. For example, the front-end equalization storage, needed to smooth out the weekend/weekday peaks and valleys, is being expanded by a factor of five. Also, as mentioned above, costly extra "food" must be artificially introduced into the sewage stream in the fall, to keep the microbe population at a level adequate to meet the demands of the peak winter season.

So, after much deliberation over the years, the Water Board has determined that, given the high fixed-cost nature of the District's expenses and the offsetting nature of costs incurred on behalf of both full-timers and part-timers, the most equitable billing rate is a fixed amount per residence. In addition, the District saves the considerable cost of installing, maintaining, and monitoring water meters buried under several feet of snow.

However, current State law requires that all water districts begin metering water usage at various times in the future. Our deadline is currently 2025. The law also requires installation of meters at all new construction. Whenever changes are made in the water delivery system, we also install meter boxes (but no meter). This is being done in anticipation of future state requirements. As the deadline approaches, the District will study alternative ways of handling the new requirements, including the use of "smart meters" that can be read remotely in order to be able to use them effectively during the winter.

Board of Directors