# New Sewage Plant in the Works

I have been learning a lot about sewage treatment systems lately. This is not simply because I have extra time or need a hobby. Donner Summit is getting a new (upgraded) sewage plant. People on the Summit will probably want to know why this is happening and what is being contemplated because it's going to cost a lot of money.

Background:
First we should have a quick overview of sewage treatment. What goes down the various drains is transported to Soda Springs to the DSPUD sewage treatment plant. There it is treated by bacteria; the sewage is filtered; treated water is released into the Yuba River in winter and spring and sprayed on the Soda Springs ski hill in summer and fall; and remaining solids are dried in drying beds and transported to Nevada for disposal. For more complete coverage you can go to the slcwd.org website, http://www.slcwd.org/pages/DSPUDfieldtripone.html for a field trip, and to http://www.slcwd.org/pages/sewer.html for general information.

Problems:
We have no choice. We have to upgrade our 1980's era plant. Its technology does not work reliably and the State has increased requirements for treated effluent. The only way to meet the requirements is with an upgraded plant. We have been out of compliance for some time and have been given until 2014 to fix the problem.

The most notorious example of possible trouble with the current plant was the algae bloom in 2008 but the plant has also not been meeting current nitrate and ammonia requirements.

Second both utility districts, Soda Springs' DSPUD and Serene Lakes' SLCWD, have undeveloped lots and there is not enough sewage capacity to enable owners to build on their lots. Those owners need to be accommodated.

Both districts have been looking at the issue and a joint facilities committee has been working to make recommendations. The two districts have consulting engineers and the SLCWD has another set of engineers to give another perspective. Some interested members of the public with relevant expertise are participating and there have been a number of field trips to other plants. Finally, environmental organizations and other individuals are keeping an eye on the process.

Our situation is more difficult than most situations because of the majority of seasonal user connections. That means sewage flows vary greatly. Low temperatures also affect processing. The bacterial population has to be kept large enough to treat sewage when flows are highest but when there are low flows, bacteria die off leaving too few for optimal processing during peak flows. When the temperatures are cold the bacteria are not happy and don't work well.

To complicate things further, at some time even more stringent requirements will be implemented to remove residual traces of prescription drugs, insecticides, and cosmetics (emerging contaminants) from the end of the sewage treatment process.

What Needs to be Done:
The new sewage treatment plant must solve the current problems, accommodate some development in the two districts, be flexible enough to deal with emerging contaminants, and operate efficiently despite cold temperatures and uneven loads.

Tom Skjelstad, the DSPUD manager succinctly illustrates the issues as the "3 R's." We have to take care of the River, the Ratepayers and the State Regulations.

Joint Committee Recommendations:
First the plant will be improved to even out the flows and deal with low temperatures. Sewage will come into tanks and be stored before being treated so that flow can be equalized. Influent will be heated and treatment tanks will be insulated so the bacteria will be happy. Those simple solutions will resolve inefficiencies but not new and future State requirements.

To meet regulations, treatment technology will change from webs that hold the bacteria and a filtering process, to an MBR (membrane bio-reactor) system. MBR will also use bacteria but then wastewater will be pulled through the membranes resulting in an almost pure effluent, which will be treated with either UV light or chloramination (chlorine/ammonia) to kill any remaining bacteria, before going into the river. The committee is leaning towards the UV process.

MBR is a more expensive process for treating sewage but there are advantages:

It is more efficient than other processes leaving a purer end product.

It can more easily handle incremental expansion so we do not have to immediately build a plant to accommodate all the current un-built lots.

It can more easily handle the addition of ozone treatment for emerging contaminants.

It requires less end-stage disinfection.

It's a proven technology and will be more reliable than other processes.

The new plant will not include any provisions for dealing with any algae problem. That would be a very expensive component to add to the process and if the 2008 episodes were one time events, then adding that process would be an unnecessary expense. MBR should help prevent that as well. If the algae comes back though, the districts could end up being fined.

Having done the initial investigation and planning the districts then met with the environmental groups interested in the Yuba River and held a public meeting on June 21 at Sugar Bowl.

The environmental groups are supportive of the joint committee's decisions

Start Quickly
If the project can be started quickly we can benefit from a sour economy. Financing rates are at historic lows and sewage plants are "on sale" greatly discounting construction projects. For example, the SLCWD's recent work has been done for as much as a 30% discount over good times. If there are delays or protests to upgrading, the costs will only increase.

In a good economy the cost of the proposed plant will be a little over twenty million dollars. This will hopefully be financed through government programs with our rates making the loan payments.

If all goes well construction could begin in 2012 with completion in 2013 so we can beat the State's April, 2014 deadline.

Some readers will be most concerned about the plant upgrade and expansion and its relation to new developments. The new plant will not be enabling any development on the SLCWD side outside of undeveloped lots and parcels.

Those most interested in the river should be pleased with the environmental groups' conditioned support, 3R's philosophy articulated by Tom Skjelstad, and that the new plant will not be asking for any increase in permitted river discharge capacity.

Ratepayers will not be happy that we are going to have to pay for a new plant but this is something we have to do, the new MBR system will be much more reliable, changes in plant design will make it more efficient, and if we can get started soon, we can save money.

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Sidebar:
Undeveloped lots will pay for any increased capacity.

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sidebar:
Plant Costs not the only considerations:
capital costs
treatment reliability
risk of future violations
chemical use
plant physical size
ease of expansion
adaptability to future requirements
impact on the river
power usage
all factors were rated by the joint committee to develop its recommendations..

This article appeared in the June edition of the Serene Lakes Property Owners' Association newsletter. It is by Bill Oudegeest. It carries no official approval of the SLCWD board. It is his personal summary of the issue.