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Pools of ideas

San Jose wastewater treatment plant a model for innovation

Silicon Valley / San Jose Business Journal - by [Jec A. Ballou](#)

San Jose's wastewater treatment plant is on course to be one of the most innovative facilities in the country and possibly the world.

A master plan for renovation of the 2,600-acre San Jose/Santa Clara Water Pollution Control Plant began in May. It aims, among other things, to help the plant generate enough energy to be self-sufficient and increase the amount of water it recycles at least threefold.

Managed by the Environmental Services Department for the city of San Jose, the plant serves 1.4 million users in San Jose and 12 other cities and utility districts. It generates two-thirds of its own energy through methane. Future potential energy sources include solar, wind, usable recycled water and applications for its bio-solids. This will allow the plant to sustain itself and also create opportunities for local businesses.

In maximizing its efficiency, the facility will probably eliminate much of its outgoing waste products and odor, making its surrounding "buffer land" usable for business development. This will generate additional revenue and offset the need to raise rates.

"We want to be self-sufficient in terms of energy and in terms of economics, and that sets us apart from what most plants are doing. We are looking at plants all over the world to see what are the best practices," said John Stufflebean, director of the Environmental Services Department.

The facility currently treats 110 million gallons of wastewater per day, with the capacity for 167 million gallons.

San Jose officials commissioned Phoenix-based Carollo Engineers and Walnut Creek-based Brown and Caldwell to complete the \$10.4-million master plan, which will look ahead 30 years. Officials made this decision instead of proceeding with an estimated \$1 billion in improvements to the existing infrastructure, which dates to 1956.

Two members of the Environmental Services Department, Kirsten Struve and Matt Krupp, will



Vicki Thompson
 Matt Krupp, co-manager of the master plan for the San Jose/Santa Clara Water Pollution Control Plant.

manage the plan with consultants and city staff.

What distinguishes San Jose's plant from others nationwide undergoing similar master plans is its amount of land, according to the engineers. At present, it uses just 170 of its 2,600 acres.

"The fact that we have so much land in such a high real estate market, is something (the engineering consultants) have never seen," Stufflebean said.

Local green businesses could benefit from the long-term objectives by turning the buffer lands into usable property for energy production. Solar companies in particular could meet a huge portion of the valley's energy needs, according to Tom McCalmont, who runs Campbell-based **REgrid Power Inc.**, one of California's five largest solar installers.

"Companies like us are always looking at these kinds of projects," McCalmont said.

He said the plant's acreage could allow for solar collection and distribution on the scale of a major utility company, rather than just rooftop collection and distribution.

The plant's operating costs for the current fiscal year are \$72.5 million and are funded by the sewer service and use charge collected from rate payers. Average monthly rates for a single-family residence range from \$15 to \$27 per month. Commercial rates range from \$2 to more than \$4 per 100 cubic feet of discharge. These rates are likely to rise, but they're comparable to others in the Bay Area, said Environmental Services Department Division Manager Bhavani Yerrapotu. Users of San Jose's system currently pay about \$10 less per month than their counterparts in Daly City and Foster City, and about \$5 less than in San Francisco.

The most recent rate hike, a 4.5 percent increase to cover escalating operating and maintenance costs, came during 2005 to 2007. Previously, the plant had not raised rates since 1995. Last year, the San Jose City Council approved a three-year rate strategy that would fund the renovation of infrastructure and proceed with the master plan. Rates are set to increase 9 percent this year and 15 percent in 2009 and in 2010.

"The question is how we make this plant an asset to the community," Yerrapotu said.

"Wastewater treatments have improved so much that it will minimize our footprint even more."

Community input to the master plan is crucial, Yerrapotu stressed, and the department intends to launch a public outreach campaign in November. Ultimately, there will be a cost savings to rate payers, who will benefit once the plant is at maximum efficiency. Additional benefits will include a reduction in odor and a response to environmental issues surrounding wastewater.

Jim Alves, owner of Hardcastle Auto Body & Paint in San Jose, who recently took a tour, was so impressed by the operations that he applied to be on the community advisory board.

"It's something I think is ahead of its time," Alves said of the plant's ambition to become self-sufficient. Of particular interest to Alves, who owns land occupied by a car wash on Coleman Avenue in San Jose, is the potential to reclaim and reuse recycled water. The plant currently generates 10 million gallons per day of usable recycled water. It would like to increase that

figure at least threefold within the next several years.

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