

The Wastewater Treatment Plant Is on the Verge of Major Upgrades – Here’s What You Need to Know

May 18, 2017

Sewage – specifically the safe, environmentally sensitive management and treatment of it at the [Sewerage Agency of Southern Marin \(SASM\)](#)’s Wastewater Treatment Plant at the end of Sycamore Avenue across from Mill Valley Middle School – is likely not a topic that you spend much time thinking about.

Fear not.

Plant manager Mark Grushayev and his staff have you covered with both their deep knowledge of the subject, and their abundance of enthusiasm for it. That enthusiasm is not without merit, as SASM is on the cusp of implementing its [Wastewater Treatment Plant Master Plan](#) (WWTP), a comprehensive 30-year roadmap for SASM’s efforts to deal with aging infrastructure, plan for expected new legal requirements, protect it from flooding due to 100-year flood events and sea level rise, prepare for its future growth needs, incorporate sustainability initiatives and reduce the impact of the plant’s odor on its neighbors.

“This process will bring the broad Mill Valley community a much more modern, highly efficient, environmentally clean and less odorous plant that we can rely on,” Mayor Jessica Sloan said.

In April, Grushayev gained the approval of design and implementation of the initial, nearly \$20 million first phase of the Master Plan by the SASM Board, which is comprised of representatives from each of its six member agencies – the City of Mill Valley, the Tamalpais Community Services District and the Alto, Almonte, Homestead Valley and Richardson Bay sanitary districts. Grushayev is sending it out to bid in the coming weeks.



The first phase of the WWTP Master Plan implementation is expected to begin in September and conclude in 2019. The WWTP Master Plan project and the Miller Avenue Streetscape Project are the largest infrastructure projects in Mill Valley's recent history.

"I and our staff are just so excited to get to this point," Grushayev said. "It's been almost four years since we started the Master Plan process. This is an enormous, thoughtfully planned effort, and now we are happy to focus on improvements to the plant that are timely and absolutely necessary."

"We're not reinventing the wheel – we're basically upgrading our infrastructure, which is beyond its useful life, and replacing outdated and frankly, worn out equipment with new state-of-the-art equipment," said SASM Board President Lew Kious (Kious represents the Almonte area). "The infrastructure we'll be replacing is absolutely essential and includes the equipment that filters, treats and transports the wastewater, as well as the electrical system that powers it. These upgrades will take the Plant into the future in a very thoughtful, economically wise and sustainable, strategic way."

The Wastewater Treatment Plant was built in 1954. It was significantly expanded in 1984, and was subject to a number of smaller upgrade projects over the years since, including an expansion of the equalization basin in 2012. Here's an aerial view of the plant:

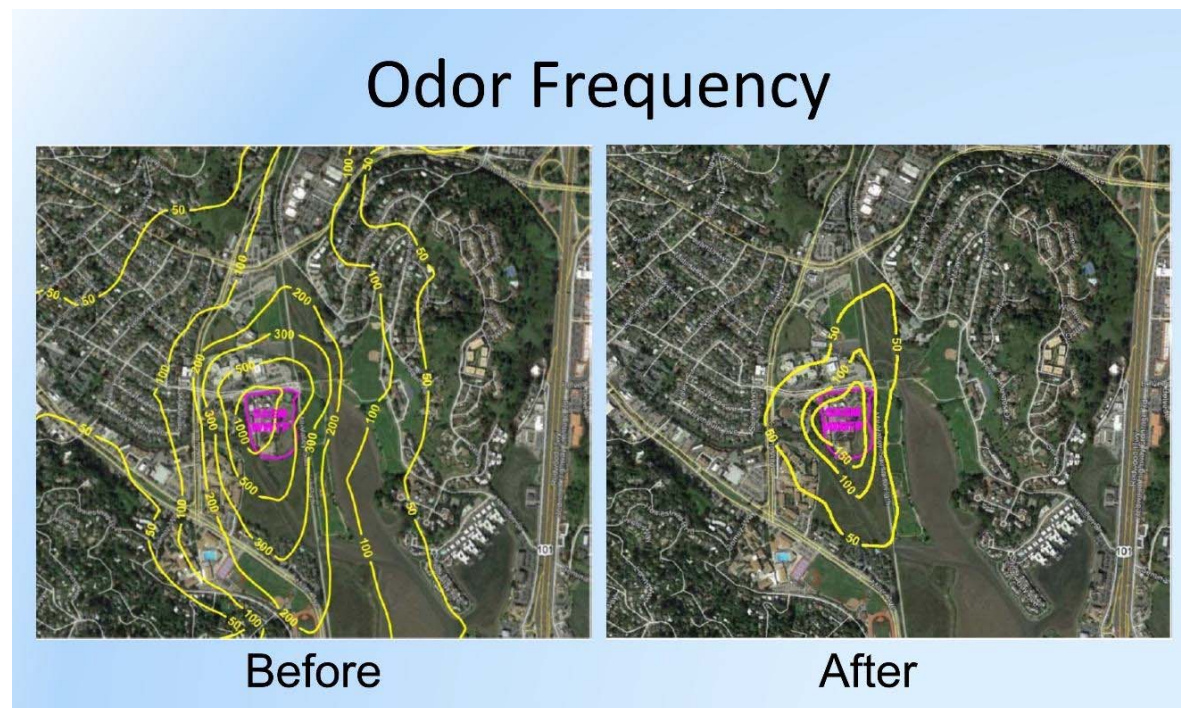


Though its infrastructure is in need of modernization, the Plant has been as busier than at any point in its history. In 2016, it treated and discharged 1,039.5 billion (yes, billion) gallons of wastewater, processed and disposed of 1,059 tons of biosolids and distributed 10.94 million gallons of reclaimed water.

The Master Plan was prepared in 2013-2014 by [Carollo Engineers](#), under the guidance of Grushayev and other City of Mill Valley Wastewater Treatment Plant (SASM contracts with the City of Mill Valley to

manage and operate the Wastewater Treatment facility for the nearly 30,000 customers it serves.) Carollo Engineers consulted with the SASM Board of Commissioners throughout the process and prepared the design of the first phase of improvements. The Plan calls for \$30 million in capital improvement projects (CIPs) over the next five years, and another \$30 million in CIPs over the 25 years after that.

During its review process, the SASM Board decided to prioritize \$2 million in improvements for the first phase. Those upgrades focus on the infrastructure that will reduce the plant's odor, particularly its impact on neighbors at the Mill Valley Middle School, the Mount Tam United Methodist Church and users of the Mill Valley-Sausalito Multi-Use Path and Bayfront Park.



“That wasn’t even on the radar initially, but we have heard from our neighbors, and the SASM Board decided to do something now to substantially reduce odor production by upgrading our odor control infrastructure,” Grushayev said.

Future Growth

In addition to upgrading aging infrastructure and address odor control, the Master Plan also seeks to deal with projected population growth. The Association of Bay Area Governments (ABAG) projects that the SASM service area, which currently includes a population of 29,000, will grow by 5 percent between now and 2035, pushing the Wastewater Treatment Plant’s “average dry weather flow” from 2.22 million gallons per day to 2.34 million gallons per day. The new plant will have capacity to accommodate these flow volumes.

Legal Requirements

The Master Plan also incorporates the requirements of the National Pollutant Discharge Elimination System (NPDES) permit program, under the auspices of the Clean Water Act. Those extensive requirements call for specific procedures, processes and equipment to improve wet weather effluent management and reduce the plant's "blending of primary effluent with secondary effluent during significant wet weather storm events for the foreseeable future."

State agencies have also recently approved permits throughout California with stricter discharge limits for ammonia, nitrogen, and phosphorous to improve water quality, so the Master Plan provides methods for complying with stricter nutrient limits in the future.

Flooding

Due to 100-year flood events and sea level rise, the Wastewater Treatment Plant is at risk of flooding, the Master Plan concluded. According to a report commissioned by SASM in 2014, stormwater flooding in combination with sea level rise could see the waters adjacent to the WWTP rise by 16 inches and 55 inches by 2050. The Treatment Plant design team recommended building a berm around the northern and western parts of the plant in coordination with local and regional flood protection measures. Subsequent phases of the Master Plan will address this issue.

Sustainability

The SASM Board concluded that improving the reliability and the performance of the Wastewater Treatment Plant will greatly benefit the environment by reducing pollutants in the San Francisco Bay. It identified a number of sustainability initiatives to be implemented at the plant, including the highly efficient equipment pumps, blowers and advanced energy efficient hydraulic and treatment systems and expanded recycle water systems and installation of high-efficiency LED outdoor lighting.

The plan calls for the replacement of many of the Plant's electrical motors with more energy efficient motors. The Plant will get new electrical switching equipment and standby power diesel generators that will provide more reliable power supply in the event of a PG&E outage. Operational efficiency will be improved with expansion of the state of the art control system.

Your Tax Dollars at Work

Since the SASM Board approved the Master Plan, the agency has taken several steps to ensure adequate funding is in place to build and operate the rebuilt facility. First, the SASM Board developed and explored financing options.

Over the past five years, SASM has taken a number of steps to finance the Master Plan in an efficient way that spreads the cost of the project over the useful life of the project. In 2012, SASM issued \$4.5 million in revenue anticipation bonds. These funds went towards immediately necessary infrastructure projects in anticipation of the Master Plan.



Those bonds were secured by SASM’s revenue stream, which comes from fees from its member agencies. Those member agencies, including the City of Mill Valley, then went through a lengthy public process to increase sewer fees via a parcel tax added to property tax bills. As has been the case since the 2012-13 fiscal year, those rates continue to be based on a “flow-based” sewer rate structure, charging property owners based on how much water they consume and thus discharge into the sewer system. The City Council approved the flow-based rate structure in July 2012 after a lengthy public discussion about strategies to encourage water conservation and to give ratepayers a way to control their sewer fees by regulating their use of water.

In 2015, SASM then issued a bond anticipation note (BAN), an issuance of debt in anticipation of paying off that debt via an forthcoming bond. The BAN proceeds were necessary to fund the design and engineering of the Master Plan 5-year capital improvement project. And in November 2016, SASM then [issued \\$38 million in sewer revenue bonds](#), paying the interest and the balance of the bond issued in 2012, paying off the BAN and leaving \$32 million for the first phase of the Master Plan work.

“This financially sound strategy avoids burdening ratepayers with the entire cost of the Master Plan work in the first year, but spreads it out over time instead,” said Councilman John McCauley, who serves as the Mill Valley representative on the SASM Board of Commissioners.

Reducing Odor Impact

Grushayev said that the odor-specific upgrades to the Plant are two-fold: First, an expansion of how much of the plant will include odor controls, i.e., odor controls will be expanded to include areas of the plant that did not previously have them. Secondly, an overall upgrade of the quality of the odor control. Today, the Plant has a largely ineffective odor control system that pushes the air through an activated carbon air scrubber system in one of its most odiferous areas. That system will be replaced by a state of the art biological treatment system that pushes the air through a water film with the biomass of bacteria that will absorb its impurities – a far more effective and modern system, Grushayev said.

“This is just the first phase of our work to reduce odor, but it’s a significant step forward,” stated Councilmember John McCauley (who serves on the SASM Board). “It will reduce the frequency of odors emanating into nearby areas and how far away from the plant the odors travel.”

The move goes beyond the initial scope of the first phase of the Master Plan implementation, and is being hailed by its neighbors.

"We were very glad to hear that the SASM Board made a point of including an additional \$2 million to reduce the odor coming from the Wastewater Treatment Plant, as it is something that we notice regularly being just across the street from it," Mill Valley Middle School Principal Anna Lazzarini said.

"We look forward to the day when we can appreciate the great work being done at the plant without having strongly pungent reminders of that work!"

###