



# South Bayside System Authority

Providing wastewater services to residents and businesses in Redwood City, San Carlos, Belmont, and West Bay Sanitary District

**SBSA BULLETIN**

**Summer 2009**

## SBSA Commission

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## *Manager's Corner*

**By Daniel Child, SBSA Manager**

### Use of Garbage Disposals Has Positive Impacts on SBSA System



The use of garbage disposals has positive impacts on the SBSA wastewater treatment system. For years disposals have been labeled as being bad, when the truth is, for SBSA, they are very beneficial and one of the most practical and cost effective ways of recycling.

Food scraps make up approximately 30% of the waste that ends up getting buried at area landfills, which is why a growing number of wastewater treatment facilities are encouraging the use of garbage disposals and solid waste collectors are urging the public to separate their food wastes for composting. Some communities, like San Carlos, have begun collecting food waste with yard waste from single family residents in order to keep it from landfills.



From the SBSA perspective, using your garbage disposal is beneficial for the treatment facility and the environment.

The premise behind the proper use of a disposal is to effectively regard food scraps as liquid (averaging 70% water, like human waste), and utilize existing infrastructure (underground sewers and wastewater treatment plants) for its management. Modern wastewater plants like SBSA are effective at processing and breaking down the organic solids into stable products (known as biosolids) and capturing methane for use in co-generation facilities that produce energy and offset the overall cost of power for the treatment process.

In fact, SBSA currently produces about 30% of the power needed to operate the treatment plant and hopes to increase that amount by encouraging residents to dispose of their food wastes, except cooking grease, through their garbage disposals. You will be seeing more information in the local media promoting this practice in the near future.

The wealth of research regarding disposals first and foremost concludes that municipal sewers and wastewater systems effectively

treat ground food. Decades of research and widespread use of disposals also support the role the appliances play in diverting food waste from collection trucks, landfills and incinerators – drastically reducing the carbon footprint of these processes!

Disposals go by many names around the world – garburators in Canada, garbage grinders in Japan are just two examples. But whatever you call them, more than two dozen communities all over the globe have studied the issue of how using food waste disposals affects sewer systems and the environment, and concluded that they don't harm the former and actually can benefit the latter. These studies are summarized at: [www.insinkerator.com/environmental/wastewater\\_treatment.shtml](http://www.insinkerator.com/environmental/wastewater_treatment.shtml) and at [www.insinkerator.com/pdf/Summary\\_of\\_Research\\_2006.pdf](http://www.insinkerator.com/pdf/Summary_of_Research_2006.pdf).

New York City once banned food waste disposals in areas served by combined storm and sanitary sewers. But the City Council directed the city's Department of Environmental Protection to conduct a 21-month pilot project that studied the impacts of using disposals on the environment, public health and the cost of operating the water and sewer system. Among the issues examined were the impact of grease and food solids on sewers, the impact on water consumption and the impact of possible increased pollutant loading on receiving waters. The study concluded that the impact of food waste disposals in any of these areas was "de minimus," and the previous ban was overturned. Read more here: [www.insinkerator.com/pdf/grinders.pdf](http://www.insinkerator.com/pdf/grinders.pdf)

For SBSA, there are huge benefits – so from our perspective, use your garbage disposals properly, and you benefit our operations and the environment!

## SBSA Commission Approves Cleaning of Fresh Water Lagoon

One of the new CIP projects approved by the SBSA Commission is the \$1,123,200 fresh water lagoon cleaning project.

At the east border of the treatment plant site, SBSA operates a lagoon which serves as the repository for stormwater runoff collected within the plant site. Use of the lagoon alleviates SBSA from having to obtain a stormwater permit from the Regional Water Quality Control Board.

There are pumps that pump water to the lagoon and, in turn, bring water back to the treatment process when the level in the lagoon reaches a particular height. The lagoon has been in service since the inception of the treatment facilities and has never been cleaned. Over time, silt and other material build up in the lagoon, leading to less and less volume available for water storage. Currently, the lagoon is nearly full of solid material and needs to be cleaned.

The fresh water lagoon cleaning project involves dredging the material out of the lagoon, dewatering the material as a precursor for hauling, and ultimate disposal in a sanitary landfill or other appropriate site. The cleaning operation will be complex due to the limited access the contractor will have to the lagoon. Also the volume of solid material in the lagoon is very difficult to determine, requiring flexibility that will need to be built into the design.

A firm with strong civil engineering background, surveying capabilities, and knowledge of local solids disposal options is necessary for the work. The local civil engineering firm, Freyer & Laureta, was selected for this work for their proven qualifications to fulfill the necessary aspects of the project. The scope of work for Freyer & Laureta is broken down as follows:

- Aerial survey for the lagoon with selected option to survey the entire plant site.
- Design documents for the lagoon cleaning, solids dewatering, and disposal.
- Engineering services during construction.



## Update on Capital Improvement Program

For nearly two years, the SBSA staff has kept readers informed about the SBSA's 10-year, \$340 million Capital Improvement Program (CIP) to return the facilities to a condition that will insure continued efficient and effective operation of the treatment and conveyance processes in a cost effective manner.

Current economic conditions at both the state and federal levels have created a situation where "grant" funds are not a viable solution and borrowing is necessary to fund the projects in the foreseeable future.

With completion of the development and identification of the CIP projects and approval of the program as a whole, work on design and construction of projects has begun. SBSA does not have adequate reserves to pay for the required work and needs to borrow sufficient funds to complete the work. The SBSA Commission determined it is best to fund the program in stages.

The first borrowing occurred in December 2008 with a bond sale in the amount of \$10 million. That money has been spent or allocated to several smaller projects and design needs of upcoming projects. It is now necessary to fund the upcoming work so that contracts can be awarded to design and construct the identified or to be identified projects. It is anticipated that the proposed borrowing will cover the cost of projects for the coming year to 18 months. The next big need will be design and construction of pump stations and conveyance system work, along with further in plant needs.

The firm of Bartle and Wells has worked closely with SBSA staff and SBSA bond counsel Jones Hall to structure a program suitable to secure the funding. It has been determined that issuing revenue bonds is the method that will best meet the current needs of the Authority. As a result, the Commission recently authorized the issuance and sale of revenue bonds in the amount of \$56 million. Fitch Ratings has assigned an "A+" rating to our offering, as it did when we issued \$10 million last December.

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The State of California through the State Water Resources Control Board has a program commonly referred to as the State Revolving Fund (SRF) which provides reduced interest rate loans to wastewater projects throughout the state. The federal government has recently authorized what is commonly called "Economic Stimulus Funds" and a portion of those funds have been earmarked for local wastewater projects.

There are many qualifiers that must be met to receive any of the funds; however, SBSA feels it is a responsible action to apply for the funds for projects that meet the criteria. SBSA has retained services of consultants to assist in the application process and many projects are on the State's SRF Priority List. Being on the Priority List does not guarantee the receipt of funds from the SRF, but only means your project will be considered against the many other criteria of the program.

The article that follows describes some of the projects to be funded by the \$56 in revenue bonds.

## Next 28 CIP Projects

Since our last bulletin, the SBSA Commission has approved 28 new projects of the 131 in the CIP, totaling nearly \$9.4 million. The Commission to date has approved 59 of the specific projects.

For the most part, these additional projects are focused in scope in that they are able to be implemented in conjunction with other, larger projects currently activated.

Eight of new projects are related to recurring maintenance improvement needs within the Plant. These types of projects involve capital expenditures that will occur on a recurring basis, such as replacement of primary sedimentation tanks collector systems, motor drive rehabilitation or replacement and coatings or painting needs throughout the plant. Many of these types of projects can either be done in conjunction with other, larger projects or are in their first year of multiple year recurring rehabilitation. The list:

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|---|--|
| 1. Primary Sed Tank Collector Drive System<br>\$1,919,100         | 15. Aeration Basins #1-4 Motorized Effluent Gate<br>Controls \$201,100 |
| 2. Plant Architectural Painting \$1,564,900                       | 16. Centrifuge Motor Drive Replacement \$161,500                       |
| 3. Fresh Water Lagoon Cleaning \$1,123,200                        | 17. Turbine #1A-4B Air Flow Monitor \$160,900                          |
| 4. IMS System Equipment Replacement \$572,800                     | 18. CCT Weir Sluice Gate Operator \$128,500                            |
| 5. SCADA Integration w/IBMS \$481,000                             | 19. Install SCADA Servers \$127,700                                    |
| 6. Thickening Pump #1-6 Remote On/Off/Speed<br>Controls \$360,600 | 20. Aeration Basins #1-4 Mudvalve Operation<br>\$80,500                |
| 7. RAS Pump #1-6 Speed Adjust \$360,600                           | 21. Secondary Inner / Outer Gates Motorized Controls<br>\$80,500       |
| 8. Aeration Basin Gate Actuators \$278,836                        | 22. Aeration Basin #1-4 Inlet Gate Controls \$80,500                   |
| 9. Digester Mix Pump Rehabilitation \$275,000                     | 23. Septic System Auto Controls & Level Measure-<br>ment \$47,600      |
| 10. High Pressure Air Piping & Instrument Air<br>\$273,000        | 24. Historian Software \$38,900  |
| 11. Primary Scum Grinders \$265,700                               | 25. Scum Flowmeter \$29,200  |
| 12. Thickener Collector Drive Rehabilitation \$245,700            | 26. Laboratory Building Roof Replacement \$23,400                      |
| 13. WAS Pump #1-4 Speed Adjust \$240,400                          | 27. WAS Flow Control \$20,200  |
| 14. Bisulfate Injector System Improvements \$225,900              | 28. Disinfection Area SCADA \$16,100                                   |

## Commission Approves '09-10 Operating Budget of \$20 Million



The SBSA Commission has approved a 2009-2010 annual operating budget of \$20,059,662 – \$17,059,412 allocated to operating expenses, \$1,767,312 allocated to FY replacement capital and \$1,232,938 allocated to the replacement capital and new capital reserve fund.

The SBSA operating budget provides funding for the operation, maintenance, safety, support and technical services required to meet the goals of the Authority.

The revenues are generated primarily through user fees collected by the member entities for the wastewater treatment service provided. Additional revenues are generated through the acceptance of restaurant grease from Bay Area grease haulers and a small amount of revenue is derived from interest income each year.

The most significant costs to SBSA include salaries and related employment costs, power, bio-solids disposal and chemicals. Recent cost increases in chemical costs have contributed significantly to increases in the cost of operating the treatment process. Sodium hypochlorite, sodium bi-sulfite, polymers and ferric chloride have all seen substantial increases in the past year and continue to climb even in today's economic climate.

As an example, the price for ferric chloride has increased from \$288 per ton in October 2007 to \$985 per ton today – an increase of approximately 340% in just 17 months. The other chemicals have not seen increases as dramatic, but all have seen double digit increases, at a minimum, in the past year.

“Even in today's economic climate, there continues to be very high demand for wastewater treatment

professionals and wages are climbing – though at a seemingly much slower rate than in prior years,” Manager Daniel Child told Commissioners.

The budget includes a 3% salary increase for SBSA employees as agreed to in the Memorandum of Understanding with Local 39. Through careful budget and staff use, the overall salary increase reflected in the budget is 2.3% for the coming fiscal year, Child reported. Power and biosolids costs are large costs associated with the operation of the wastewater treatment facilities, however, SBSA continues to evaluate and implement improvements that keep these expenses as low as possible. The use of drying beds in place of the centrifuge lowers the cost of both (power and biosolids handling) through the use of wind and sun to dry the material.

The Fiscal Year 2009/2010 Replacement Capital expense budget has identified 41 needs at a budgeted cost of \$1,767,312.00. These are items that are not included in the 10-year CIP and tend to be smaller jobs that typically are performed with little engineering assistance and may be performed by in-house staff. The allotment of \$3.0 million for these projects initiates the “pay as you go” process of capital work for work needed after completion of the projects identified in the 10-year CIP. The balance of this money (\$1,232,938) will be accumulated in the Capital Replacement and New Capital Reserve for future non-CIP capital needs.

## SBSA Wins Award for Sewer Science Program

**SBSA** was among 19 Northern California organizations and individuals recognized recently for their efforts to protect and preserve the environment at the 2009 Environmental Awards Ceremony in San Francisco, presented by U.S. Environmental Protection Agency (EPA).

The 2009 Environmental Award was presented for the Sewer Science program. SBSA has been one of the early pioneers of this unique high school educational outreach program, along with the Palo Alto wastewater treatment plant and the California Water Environment Association (CWEA).

Sewer Science is a week-long, hands-on lab that teaches high school students about the wastewater treatment process. The lab uses specially designed tanks, analytical equipment, and student workbooks. Students make “wastewater” - adding items, such as food, toilet paper, oil & ammonia, conduct chemical water quality tests after each treatment step and record data. The highlight for the students is viewing the micro-organisms under a microscope; they realize the microbes are digesting the waste and cleaning their dirty water.

Teachers co-teach the program with staff from their local treatment plant, which underscores the authenticity of the lab, and leads to discussions about environmental career opportunities. Pollution prevention messages are also reinforced, as students realize that they can each play an important role in protecting their watershed.

“Sewer Science addresses educational challenges with hands-on, integrated learning while providing a unique high school outreach program,” said former SBSA program coordinator Kathy Suter, who was on hand to receive the EPA award along with SBSA colleagues Norm Domingo (who has trained many to teach the program) and Maya Slocum (co-creator). Brad Eggleston, (who helped develop the first kits) was there from the Palo Alto treatment plant. Stephanie Hughes, Rhea Williamson and Phil Bobel, who were co-creators of the lab, were unable to attend.

SBSA has provided members of its staff to teach sewer science at high schools within the SBSA jurisdictions for



L to R: SBSA Technical Services Supervisor Norm Domingo, SBSA Pollution Prevention Specialist Maya Slocum, Buzz Eggleston from Palo Alto Plant, and former SBSA Sewer Science Program Coordinator Kathy Suter

10 years, without cost to the schools, reaching 1,500 students annually. SBSA staff has also been instrumental in taking sewer science nationwide, helping coordinate and present the Water Environment Federation, WEF Teach program.

“Sewer Science is a key component of SBSA’s Pollution Prevention Program,” said SBSA Technical Services Director Ken Kaufman. “When the lab is complete, an SBSA representative discusses practical water quality topics with the students. The pay back is when these students become well-informed members of our community and can react intelligently to water pollution issues. We feel that Sewer Science is an investment in the future.”

## SBSA Individuals Win State and National Honors, Local Business Too

**A** current, a retired, and a former SBSA employee recently won state and national awards.

Technical Services Supervisor Norm Domingo is the California Water Environment Association (CWEA) Pretreatment, Pollution Prevention & Stormwater Person of the Year.

Retired SBSA Lab Supervisor and Sewer Science Program Coordinator Kathy Suter is the Water Environment Federation (WEF) 2009 winner of the Arthur Sidney Bedell Award for extraordinary service to the wastewater industry.

Former SBSA Laboratory specialist Sara Burke, now with another wastewater agency, won CWEA Laboratory Person of the Year and WEF Laboratory Analyst Excellence award.

A business within SBSA, L<sub>3</sub> Communications of San Carlos, won the CWEA Pretreatment, Pollution, Prevention and Stormwater Facility of the Year honor.

In Domingo's nomination for the statewide honor, these achievements were highlighted:

- As part of Metal Finishing Facility P2 audits, Norman's final report included suggestions to optimize processes: recommended methods to reduce overall water usage through less demanding rinse techniques, concurrent baths, on-demand switches, conductivity sensors and reduce/prevent dragout with dragout tanks, drip bars, drip trays between tanks.
- At the department level, Norman has provided formal cross-training in industrial sampling for lab staff; has trained new SBSA inspectors to conduct industrial monitoring, inspection and enforcement; has developed SOPs many Source Control tasks. As Sewer Science instructor for the last decade, he has taught the concepts of wastewater treatment to thousands of high school students.
- He helped develop a new county-wide Dental Outreach Program in coordination with other wastewater treatment plants in San Mateo County with an emphasis on the use of best management practices and amalgam separators. The goal is to use a common approach and deliver a consistent message to the dentists throughout the county in the drive to reduce mercury in wastewater.
- At the State level, Norman has developed and delivered several training presentations on the topics of inspection, sampling, permitting and enforcement at CWEA annual conferences, Northern Regional Training Conferences, P3S Annual conferences.



*Norm Domingo*