



South Bayside System Authority

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

SBSA BULLETIN

JANUARY 2008

SBSA Commission

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WARREN LIEBERMAN NEW
SBSA COMMISSIONER

See Details Inside.

Manager's Corner

By Daniel Child, SBSA Manager



Organizational changes that will make the daily operations at SBSA stronger and give us a knowledgeable coordinator for the upcoming Capital Improvements Program (CIP) were recently made.

V. Gary Storms, who has been the SBSA maintenance manager since 1989 and with SBSA for 25 years, is our new CIP coordinator.

Robert Donaldson fills the newly created position of plant manager, overseeing both the operations and maintenance departments. Bob has been with SBSA since 1985 and operations manager since 1989.

These moves will strengthen the SBSA organization and allow us to meet the future needs of the facilities. From my experience, combining oversight of maintenance and operations to one person allows for more efficient coordination and management. This management change along with Gary's hands on knowledge and experience with SBSA systems will enable him to be a driving force in the implementation and administration of the CIP.

The moves were triggered when Gary, along with other maintenance supervisors, stated they are hoping to retire in about 18 months. With the CIP pending, it made sense to make the organizational adjustments and begin the change process now.

The CIP is required, as reported in past months, in order to modernize the SBSA infrastructure, a step necessary to address the most critical needs of our aging wastewater system and treatment facilities.

It is our goal to present a completed CIP project plan to the Commission for approval in January. This which would allow time for the SBSA member agencies to take their respective budgetary actions required to finance the CIP. Implementation of the five-year CIP will begin in July 2008.

Bartle Wells Associates has been hired to assist SBSA in the evaluation of options for funding the CIP. They are evaluating many financing alternatives to facilitate the implementation of the CIP projects. Methods such as pay-as-you-go, low interest state revolving

Manager's Corner

fund loans, local and national bank loans, revenue bonds, and other innovative borrowing scenarios will be evaluated for the best overall financial package to meet the project costs and cash flow needs. They will also look at the impact the CIP implementation will have on ongoing long-term Operations & Maintenance costs.

Bartle Wells is evaluating the overall needs of the agency, and will recommend the best available funding mechanisms and recommend rate adjustments and timing as required to meet the needs of SBSA's capital, operations, and maintenance budgets.



V. Gary Storms, left; Robert Donaldson, right

In Addition to Necessary CIP, SBSA is Adopting an Advanced Maintenance Model

Growing public awareness and concern for controlling water pollution led to enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the Clean Water Act. The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry.

In the wake of the Clean Water Act, many wastewater treatment plants across America, including SBSA, were constructed in a manner to comply with the new law. Built in 1980-82 and operational in 1982, the SBSA facility was typical of the era— an advanced, two-stage biological treatment facility that uses bacteria to remove organic material and toxics from the wastewater it treats. Sewage arrives at the plant through a series of pipelines and pump stations. The sewage then passes through physical and biological processes which results in high quality effluent being discharged to the deep water channel of San Francisco Bay. Today, some of the wastewater is now treated to be used for recycled water.

According to Bob Donaldson, whom recently assumed the new position of plant manager, combining operations and maintenance, the 1980s featured significant training across America to efficiently and environmentally operate plants like SBSA. Training has been successful to allow SBSA to remove more than 97 percent of all solids, organic materials and pathogens from the wastewater.

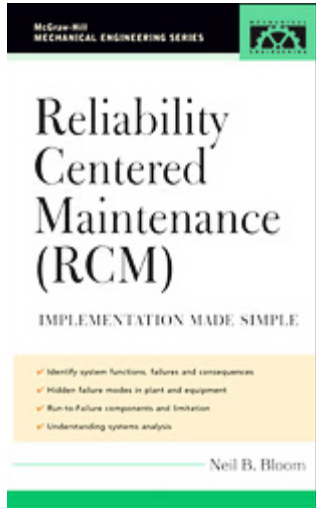
In the 1990s, the wastewater industry discovered that asset management was becoming important because of the aging of the infrastructure and systems, according to Donaldson. By 2005, most wastewater agencies born out of the Clean Water Act began to realize that the 25-year lifespan was around the corner.

In this regard, as reported for the past several issues and updated in this issue, SBSA is planning a major Capital Improvement Program (CIP) for 2008.

But at the same time, Donaldson reports, SBSA is adopting a state-of-the-art response system called Reliability Centered Maintenance (RCM). RCM is a proactive repair model that has been used by the airline, communications, refining and energy industries for years.

RCM uses a series of time tested and reliable approaches to predict equipment failure in advance to its occurrence so that repairs can be made prior to failure. The result is that the repair is usually less expensive because catching the repair early often means less material and labor needs and allows efficiencies that are better leveraged by the scheduling of work. And that furthermore, Donaldson explains, the repair is made prior to failure which means system reliability is not impacted. The key to RCM is what is called "Condition Assessment."

SBSA is adopting a state-of-the-art response system called Reliability Centered Maintenance (RCM), a proactive repair model



Condition Assessment uses various testing protocols to measure and test treatment plant equipment to find parts or subsystems that are starting to fail prior to any outward indication that a condition is worsening. The testing for condition assessment under RCM is called predictive maintenance [PdM.] PdM uses vibration analysis, oil analysis, ultrasonic, thermography among other types of testing that are able to predict failure prior to its occurrence.

Donaldson said that condition assessment also includes Preventative Maintenance [PM] with careful inspection by maintenance experts to check for proper operation, bolting practices, lubrication and cleanliness to avoid contamination of moving parts. Each type of equipment will have its own set of PdM and PM tasks that can be performed to keep reliability levels high and at the lowest possible cost.

“SBSA has used thermography successfully in the past and this program will expand the

use of thermography along with the new testing opportunities to jump start the SBSA RCM program to increase process system reliability while also driving maintenance costs down over the long run,” Donaldson said.



First Six Months of Producing Recycled Water for Redwood City Goes Smoothly

The first six months of producing recycled water for Redwood City has gone smoothly at SBSA, reports Assistant Plant Manager/Recycled Water Coordinator Hugh Logan.

Redwood City began delivering recycled wastewater to 30 businesses and city-owned sites in June to use for landscape irrigation, industrial processes, commercial cooling, industrial laundry and toilet flushing. The service is the first phase of a plan that ultimately will deliver recycled water to businesses and many public places throughout the eastern portion of the city, including the industrial and port area in 2008 or 2009.

A water recycling facility was built adjacent to the SBSA facilities.

“We have a new process that utilizes existing filtration equipment with new coagulant and disinfection systems to produce recycled water that meets or exceeds all permit requirements,” Logan said.



The production and monitoring is automated, which allows SBSA personnel to program the amount of recycled water Redwood City requires each day. The wastewater is then treated and transferred to a storage tank that Redwood City utilizes for distribution.

“We designed the new recycling facility to be as automated as possible,” Logan explained. “It operates 95 percent of the time automated.” SBSA instrumentation and lab technicians test from their perspectives weekly.

As examples of production, SBSA produced 14 million gallons of recycled water in August, 11.2 million in September, and 9.2 million in October. The amount diminishes during the wetter, cooler months.

By 2009, when all first-phase customers are connected, the city expects to reduce its potable water use by 20 percent, and the system will serve its entire industrial area.

The project was based on an engineering feasibility study prepared by Kennedy/Jenks

Consultants that established a multi-phase program outlining the roles of Redwood City and SBSA. A contractual agreement governed construction and operation of the recycled water facilities at the SBSA site.



SBSA designed, constructed, and operates the recycled water treatment facilities. SBSA also built the storage tank, which was turned over to the city. Redwood City designed, built, and connected the distribution system and operates the systems that store, pump, and distribute recycled water to users throughout the community.

The water recycling facility was constructed next to the SBSA treatment plant. The Redwood City Recycled Water Project evolved over seven years, including a pilot program called “the First Step Project.”

The WaterUse Association, a national group that promotes water recycling, named the Redwood City Recycled Water Project as its ‘Large Project of the Year’ for 2007

Warren Lieberman Joins SBSA Commission as Belmont’s Representative

Belmont Mayor Warren Lieberman has been selected by his colleagues on the City Council as Belmont’s representative to the SBSA Commission.

Lieberman was elected to the Belmont City Council in 2005 after several years on the city’s Finance Commission.

He is president of Veritec Solutions, a consulting and software development firm focused on helping companies improve their pricing and revenue management capabilities. Veritec is based in Belmont, with a staff office in Boston. A pioneer in expanding the pricing and inventory control concepts of revenue management, he began his career at American Airlines in 1984. Over the past decade, his experience includes pioneering new approaches to forecasting, optimization, graphical user interfaces, performance measurement, and

ancillary decision support capabilities to support revenue management decision-making.

Warren is chair of the Revenue Management and Pricing Section of the Institute for Operations Research and the Management Sciences (INFORMS) and serves on the editorial board for the Journal of Revenue and Pricing Management.



He has received international recognition as perhaps the world’s leading expert in non-traditional implementations of revenue management. He pioneered the application of revenue management techniques in the cruise, timeshare exchange, and equipment leasing industries, providing both design and technical leadership. Lieberman designed some of the earliest multi-method adaptive demand forecasting techniques used in revenue management systems.

He received a B.S. degree in mathematics with a specialization in computer science from the State University of New York at Binghamton. He holds a Ph.D. in Operations Research from Yale University.

Employee Corner

■ **Terry Taylor** retired as of November 30, 2007. He had been with SBSA for 25 years. He was a plant mechanic.

New Hires as regular appointments:

- **Mike Chandler** – Plant Mechanic I
- **William Swalve** – Plant Mechanic I
- **Edward McGinley** – Secretary to the new Ops/Maint. Dept.

Visit SBSA ‘s Website at www.sbsa.org