



South Bayside System Authority

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

SBSA BULLETIN

Winter 2008/2009

SBSA Commission

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Manager's Corner

By Daniel Child, SBSA Manager



Progress Report on Our CIP

Since our last SBSA update, we have been busy on several fronts in implementing the 10-year, \$339 million Capital Improvement Program (CIP), which contains 131 projects to upgrade SBSA facilities, systems, and operations.

The Commission approved the CIP in May 2008 and requested that staff bring projects back to the Commission for individual project approval. Thus far, six projects from the CIP have been activated along with 15 projects that are carried over from the previous fiscal year that are also active.

The Commission recently approved 17 projects that are ready to be activated in early 2009.

The Commission has authorized the issuance of \$45 million in revenue bonds in the first expenditure toward the CIP projects. Within weeks of the Commission's authorization, Fitch Ratings assigned an 'A+' rating to what they call in the market the South Bayside System Authority's (SBSA) \$45.5 million 2008 wastewater revenue bonds. Fitch, in a public release, said: The 'A+' rating considers the underlying credit quality of the three participating member agencies (West Bay Sanitary District, The City of Redwood City and The City of San Carlos), the sizeable 10-year SBSA capital improvement program (CIP), and the necessary increases in member user charges to support the CIP.

I invite you to read more about these developments as well as a host of other news events in our newsletter.

✓ **FITCH RATES SBSA BONDS**

✓ **NEW TELEPHONE SYSTEM**

See Details Inside.

Conveyance System Master Plan: Why It's Important

The Bay Area engineering firm of Winzler and Kelly has been authorized to develop a Conveyance System Master Plan for SBSA, part of the Capital Improvement Program (CIP). It is expected to take through spring 2010 at a total cost of \$1.6 million dollars.

The SBSA conveyance system includes four pump stations, one each for each of the four member agencies, a wet weather booster station located near the San Carlos Airport, a lift station located at the wastewater treatment plant and an eight mile long reinforced concrete force main with approximately 3,400 single "O"-ring bell and spigot joints, much of which is buried in very soft bay mud allowing the pipe to move underground sometimes creating sewage leaks. Additionally, because of these soft mud conditions the pipe is very susceptible to seismic activity.

The pump stations are in varying states of condition ranging from very poor to needing important upgrades that warrant either complete replacement or significant rehabilitation. In some instances equipment is at the end of its useful life or the condition has degraded to the extent that the systems are not reliable to meet regulatory requirements during wet weather conditions.

Additionally, due to their current condition, maintenance requirements and costs are higher than acceptable. The 40-year old force main's condition will worsen over time with joint leaks promoted by bay mud soil conditions. Recent information indicates the pressure ratings of some sections of the force main are likely inadequate in wet weather conditions.

"The design used for the current force main was the popular design for pipes at the time. Pipe design today has now advanced to the point where the new design standards will be able to address all of these issues," said SBSA Senior CIP Program Manager, Bob Donaldson.

The SBSA conveyance system is a dynamic engineering feat with four pump stations simultaneously pumping sewage non-stop, 24 hours a day, every day, into the same pipe under pressure. The combined flows of all the pump stations during the low flow night time dry weather periods is approximately five million gallons a day [MGD] up to the high flow wet weather flows of 71 MGD.

"Designing a system that reliably pumps that range of flows and pressures, day and night, season to season into a single pipe takes careful analysis which includes complicated computer simulations, add to that projecting the needs of the service area for the next 30 years or so, and you can see why the master planning approach, while expensive, was a necessity." Donaldson added.

These dynamic flow and pressure operating characteristics, coupled with the need to reliably meet regulatory requirements under wet weather conditions, necessitate close study and careful analysis in order to ensure that the new pump station and force main designs take SBSA as far into the future as possible.

The SBSA CIP has approximately \$200 million dedicated for 11 CIP projects identified for the conveyance system. Donaldson noted, "Again, an investment of this magnitude, and the known complexity of the project as noted previously really demands SBSA start this process with an integrative Master Plan."

Donaldson added that numerous interrelated critical preliminary tasks need to occur prior to full design and construction of the new conveyance system.

"The Conveyance System Master Plan [CSMP] process will ensure that the public's money is invested wisely," Donaldson said, while also achieving these other goals:

- a systematic approach to implementing the conveyance system projects,
- more accurate cost estimates based on conveyance project conceptual designs,
- possibly reduce the overall carbon footprint of the conveyance system,
- provide reliable automation of facilities to reduce staffing needs and,
- organize and maintain a Stakeholder Program to keep SBSA and other stakeholders informed of progress and allow for input on key decisions.

'The Conveyance System Master Plan process will ensure that the public's money is invested wisely'

CIP Projects Underway

SBSA's recently approved \$339 million Capital Improvement Program (CIP) contains 131 projects, some of which are actively being implemented and some of which are awaiting initiation.

The Commission approved the CIP in May 2008 and requested that staff bring projects back to the Commission for individual project approval. Thus far, six projects from the CIP have been activated along with 15 projects that are carried over from the previous fiscal year that are also active. There are another 14 projects that are ready to be activated.

The six projects that have been implemented since the beginning of this fiscal year are:

1. Administration and Plant Control Building – currently in planning phase
2. Bair Island Force Main – alignment study ongoing, concurrently with design
3. Conveyance System Force Main – master planning begun
4. Force Main Repair and Replacement – ongoing repairs, as needed
5. Hypochlorite System Improvements – design begun
6. Warehouse Improvements – modifications to the storage warehouse.

The total encumbered cost of these projects is \$3,297,000.

Additional projects ready to be implemented are, which combined cost \$19.4 million, are:

1. Corrosion & Odor Control Program, \$50,000.
2. Corrosion & Odor Control Master Plan, \$148,500.
3. SHB Control Room Scrubber, \$473,400.
4. & 5. Septage/Grease Receiving Area Improvements, \$1.1 million.
6. & 7. Protective Coatings: Primaries, FFR & Secondary Mechanism, \$5.4 million
8. Secondary Clarifier Drive Rehabilitation, \$251,200.
9. Plant Gallery Floor Sealing, \$250,000.
10. Plant Electrical System Upgrade , \$5.75 million
11. Automation Program, \$30,000
12. Activated Sludge Automation, \$4.4 million
13. Waste Gas Burner, \$1 million
14. Freight & Passenger Elevators Rehabilitation, \$496,700

Some projects will begin with planning or a 1st phase task to be followed, later, with additional tasks.

Commission Authorizes Bonds for CIP: Fitch Assigns 'A+' Rating

The SBSA Commission has authorized the issuance of \$45 million in revenue bonds in the first expenditure toward the 10-year \$339 million Capital Improvement Program to upgrade SBSA facilities, systems, and operations.

“With completion of the development and identification of the CIP projects and approval of the program as a whole, it is time to begin work,” Manager Daniel T. Child told the Commission. SBSA does not have adequate reserves to pay for the required work and needs to borrow adequate funds to complete the work. The SBSA Commission has determined it is best to fund the program in stages. The first phase of projects is commencing and it is necessary to secure funds for the first 12 to 18 months.

Within weeks of the Commission's authorization, Fitch Ratings assigned an 'A+' rating to what they call in the market the South Bayside System Authority's (SBSA) \$45.5 million 2008 wastewater revenue bonds. The bonds were scheduled to price as early as the week of Nov. 3, with proceeds to be used to construct improvements to the authority's wastewater system, fund a debt service reserve, and pay costs of issues.

Fitch, in a public release, said: The 'A+' rating considers the underlying credit quality of the three participating member agencies (West Bay Sanitary District, Redwood City and the City of San Carlos), the sizeable 10-year SBSA capital improvement program (CIP), and the necessary increases in member user



charges to support the CIP. The SBSA has developed its 10-year CIP to address necessary repair and rehabilitation of its infrastructure, which is expected to be funded almost entirely from this offering and additional issuances. Participating members of the SBSA's debt financing are not obligated to make up deficiencies in SBSA bond payments from other members. As a result, the rating analysis considers the credit quality of each of the participating members. All participating members maintain similar credit profiles, which include no existing debt, sound operating performance, and high wealth service areas.

Fitch continued: Financial performance for all participating members has been good and is expected to remain favorable through the fiscal 2018 projection period. Liquidity ratios are somewhat mixed among the participating members, but all members have sufficient reserves given the nature of the respective systems and each is projecting to increase their fund balances through the forecast period. While the internal system capital needs of each member is relatively minor and is expected to be funded from surplus revenues of the respective systems, all members are anticipating sizeable rate hikes to fund the SBSA's CIP. This is expected to double or nearly double the average monthly residential bills of each member by fiscal 2018.

Engineering Services Approved for Bair Island Force Main Replacement

The SBSA Commission has authorized an updated \$1.2 million contract with Kennedy Jencks for Engineering Design and Construction Support Services for design and construction of the replacement section of the influent force main extended from Whipple Road at the south end of Inner Bair Island to the San Carlos Booster Station near San Carlos Airport.

The U.S. Fish and Wildlife Service (USFWS), in conjunction with the California Department of Fish and Game (CDFG), are engaged in modifications to Bair Island that will restore tidal flood conditions that pre-existed development in the San Francisco Bay area.

As part of the work, levee improvements will be conducted on the portion of Inner Bair Island located closest to US101. The levee work includes the addition of imported clean fill to increase the elevation and width of the flood protection berm on the southwestern edge of Inner Bair Island, as well as fill to provide an FAA-required safety area for the San Carlos Airport runway. Approximately one mile of the proposed SBSA influent force main replacement is located on Inner Bair Island in the location where the levee fill material will be placed.



Preliminary design calls for the new pipe to be installed parallel to the existing influent force main. SBSA has a limited time window for completing the design and construction of the new section of pipe; once imported soil is compacted to final grades and Inner Bair Island is flooded, USFWS will no longer allow construction activity on Inner Bair Island.

The existing section of the influent force main that crosses Inner Bair Island has produced the highest number of pipe leaks and related work orders of any section of the force main; the section with the second highest number of repair orders extends across the Pulgas Creek Slough from Bair Island through San Carlos Airport (SCA) property to the San Carlos Booster Station (SCBS). The existing pipe is constructed of reinforced concrete pipe (RCP) laid in 12 foot sections and connecting to adjacent upstream and downstream sections with "O"-ring sealed bell-and-spigot joints. Because the influent force main is in Bay Mud, which is prone to settlement, the RCP moves, frequently resulting in leaks from the joint seals. Repairs are costly and time consuming for both staff and managers and pose the potential risk of contaminating nearby waterways.

A preliminary design concept calls for the new pipe on Bair Island to be constructed of high-density polyethylene (HDPE) pipe, the segments of which will be thermally fused together at each joint. The flexibility of the HDPE will allow for the movement of the pipe in the young bay mud. Additionally, thermally fusing pipe segments together at each joint mitigates the risk of leaks from the new pipe on Bair Island.

SBSA has identified significant benefits to extending the project area across the sloughs on both sides of the island, removing the need for future construction on the island and including replacement of the section of force main between Inner Bair Island and the SCBS.

Project to Replace Automatic Transfer Switches to Prevent Electrical Failures

Thermography testing uses infrared technology to detect “hot spots” on electrical connections indicating poor or loosened connections that are in need of repair. Without repair, the connection and the equipment it is energizing will, in time, over-heat and fail. Thermography testing is an important tool used for predicting failures and initiating timely replacement of aging electrical components and is a critical aspect of SBSA's Reliability Centered Maintenance (RCM) programs.

The emergency generators at the SBSA plant and pump stations, including the electrical transfer switches, are over 25 years old. Thermography testing performed in December, 2007 revealed problems with all four of the main plant Automatic Transfer Switches (ATS), with potential imminent failure of the ATS for Generator #1.

Manager Daniel T. Child declared an emergency in early January, 2008 to replace the ATS #1 and the Commission ratified this declaration at the January 28, 2008 meeting. The work on ATS #1 was completed in May, 2008.

As a result of the findings with ATS #1, the existence of three other identical ATS assemblies at SBSA, industry experience with this same aging electrical equipment and due to the vital importance associated with this equipment for plant reliability and regulatory requirements, staff recommended a project to replace the three other ATS assemblies at the plant.

The actual construction will begin in spring 2009. This contract provides for a new ATS, temporary power to the specific Motor Control Center during construction, and demolition services for Generators 2, 3, and 4. The Commission has approved a \$158,750 contract for the purchase and installation of the ATS Equipment with Blocka Construction of Fremont.

New Phone System Replaces Inadequate One

The SBSA Commission has approved a new telephone and voice mail system.

ExtraTeam, a systems integrator and IT consulting firm headquartered in Pleasanton, is responsible for implementing the \$136,316.18 system.

The current telephone and voice mail systems not only lack most features that residential and commercial telephone users have been using for many years, but it is not reliable. In addition, the existing system has reached the maximum capacity for adding extensions.

Discussions with AT&T and other system providers have lead SBSA staff to the conclusion that an IPTel (Internet Protocol Telephony) solution will provide the modern features and capacity for expansion to accommodate SBSA's current and future needs. It includes robust voice mail and communications capabilities such as unified messaging (merging of voice mail and email.) SBSA staff investigated two systems proposed by AT&T and one system proposed by ExtraTeam. The ExtraTeam solution was determined to be the best fit and most cost effective for SBSA's needs.

The new system is expected to save SBSA approximately \$10,000 per year versus the current system in long term O&M cost of voice and data communications.

Bob Wandro Joins SBSA as Laboratory Director

Dr. Robert “Bob” Wandro has joined SBSA as its new Laboratory Director after 17 years with the San Jose/Santa Clara Water Pollution Control Plant. He replaces the retiring Kathy Suter.

Wandro earned his Ph.D. in analytical chemistry in 1984 from the University of Iowa, with a thesis on analytical emission spectroscopy. He earned his B.S. in chemistry from St. Mary’s College in Moraga.

He started his career with the SJ/SC WPCP as a research chemist, supervising a staff of eight to 14 chemist and lab technicians and managing two sections – analytical (organic and metals) and client support (sample receiving and data reporting).

In 2007 Wandro was named acting lab manager over 26 microbiologists, chemists, research chemists, and lab techs. In 2008 until assuming the SBSA position he was environmental laboratory supervisor, managing half the lab, including the two sections he was involved with as a research chemist.

Before joining the public sector, he worked as a senior materials and process engineer for Lockheed M&S Company for five years and as a chemist with Crown Zellerbach for a year.

Professionally, Wandro has served as Laboratory Committee Chairman of the Bay Area Clean Water Agencies (BACWA), made presentations to numerous associations and organizations on a multitude of topics, including “Low-Level Determination of Mercury in Wastewater Effluent.” In addition, he was recently elected to the board of directors of the Santa Clara Valley Section of the CWEA (California Water Environment Association).

His new job makes his commute easier. Wandro lives in San Carlos with his wife, Cathy, and the youngest of three sons. He doesn’t even need to get on a freeway to reach SBSA’s Redwood Shores facilities.

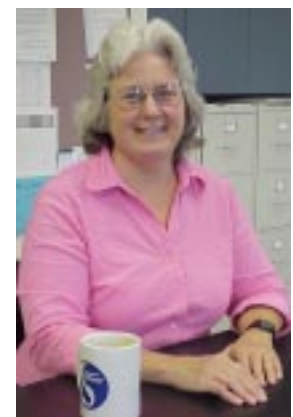


The Retiring Kathy Suter Was First Female President of CWEA

The retiring Kathy Suter is one of the most accomplished women in her field in California history, as highlighted by her selection as the first female president of the California Water Environment Association (CWEA) from April 2005-April 2006. During her term as CWEA’s president, she helped develop a code of ethics for CWEA’s certificate holders that reflects the high standards of practice held by the wastewater profession. She personally holds the top certificate of competency that CWEA offers as a Laboratory Analyst, Grade IV. She was named CWEA Supervisor of the Year in 2001 in competition with wastewater supervisors throughout the state.

In addition to supervising SBSA’s laboratory staff, Kathy took the lead in public education outreach by organizing tours for both school groups and adult organizations. She also was SBSA’s key person involved in the award-winning Sewer Science program, in which she and other SBSA employees made presentations to students at several south County high schools.

Kathy has worked in the wastewater field for more than 25 years in the Bay Area, but got her start in the field in Jefferson Parish, Louisiana in the late 70’s. She received her B.S. in Marine Science with a concentration in Biology from Southampton College, a part of Long Island University. After much traveling, various jobs relying mostly on the large amount of chemistry she too, one daughter, and more traveling, she ended up in the Bay Area and discovered wastewater again as a great career opportunity. The excessive traveling was courtesy of husband Dan, who recently retired from U.S. EPA Region 9.



Andrew Baker Joins SBSA as Operations & Maintenance Manager

Andrew P. Baker has joined SBSA as its new Operations and Maintenance Manager. For the past five years he worked in two locations for Veolia Water North America, a water services provider for local and federal governments and business and industry. From July 2006 until joining SBSA, he worked for Veolia's Pleasant Hill Office, as Vice President/Area Manager for Southern California, Arizona, and Nevada Operations. In this position he was responsible for and had direct oversight for the safety and welfare of 88 employees, environmental compliance and the financial status of nine projects.

From 2003 to 2006 he was Project Manager for Veolia's Rialto operation, responsible for an 11.7 MGD wastewater reclamation facility and 250 miles of collection system.

From 2001 to 2003 Baker was Project Manager for Veolia's Exxon Mobil Torrance Refinery operation, responsible for the daily compliant operation of a 1.0 mgd fluidized bed reactor groundwater remediation facility. From 1999 to 2001 he was Project Manager for ECO Resources Barstow operation, responsible for the operation of a 4.5 mgd wastewater facility and collection system.

He began his wastewater career with the Victor Valley Wastewater Reclamation Authority in Victorville, for which he worked from 1984 to 1997, the last five years as operations supervisor for a 9.5 mgd wastewater reclamation treatment facility.

Baker holds an A.S. degree from Victor Valley College and a Grade IV operator's certificate from CWEA.

Of particular interest to SBSA in light of its \$339 million 10-year Capital Improvement Program (CIP), Baker has experience in the coordination of plant expansion and capital improvement projects, including selection of consultants, contractors and engineers and working with them through all phases to facilitate successful projects.

His wife of 34 years is the executive assistant to the superintendent of the Hesperia Unified School District. They have two adult children, a daughter who teaches English and a son who works for Verizon.

Visit our website at www.sbsa.org

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