October 16, 2017

SUBMITTAL VIA EMAIL TO: vdouglas@baaqmd.gov

Mr. Victor Douglas, BAAQMD
375 Beale Street, Suite 600
San Francisco, CA 94105

SUBJECT: COMMENT LETTER ON THE PROPOSED BAAQMD REGULATION 11, RULE 18: REDUCTION OF RISK FROM AIR TOXIC EMISSIONS AT EXISTING FACILITIES

Dear Mr. Douglas:

The Bay Area Clean Water Agencies (BACWA) appreciates the opportunity to comment on the Bay Area Air Quality Management District's (BAAQMD) proposed Regulation 11, Rule 18 (Rule 11-18). BACWA is a joint powers agency whose members own and operate publicly-owned wastewater treatment works (POTWs) that collectively provide sanitary services to over 7.1 million people in the nine-county San Francisco Bay (SF Bay) Area. BACWA members are public agencies, governed by elected officials and managed by professionals who protect the environment and public health. We have an active committee structure with our Air Issues and Regulations (BACWA AIR) Committee charged with working cooperatively to address air quality and climate change issues.

As you would expect from dedicated environmental stewards, BACWA members provide reliable wastewater treatment to protect public health and the environment, and strive to exceed air and solids management requirements. We are providing specific comments below describing our support for, as well as our concerns and recommendations related to, the proposed Rule 11-18 and the Draft Environmental Impact Report (EIR) for your consideration.

First, we very much appreciate the willingness of the BAAQMD staff to work collaboratively with BACWA to understand the impact of Rule 11-18 on wastewater treatment facilities and their rate payers, as well as update the data serving as the basis for the emissions inventory and draft preliminary prioritization scores. We support the efforts of BAAQMD in protecting public health and the environment, and will continue to work collaboratively with staff through the implementation of Rule 11-18.

The concerns and recommendations that follow are specific to the draft Rule and EIR.

1. Sewage Treatment Facilities Are Inaccurately Described and Referenced in the EIR

BACWA proposes the following editorial changes to the text to accurately depict and reference sewage treatment facilities and operations:

a) In Table 2.5-1, the primary risk drivers listed for Sewage Treatment Facilities in general (including cadmium and mercury) are incorrect. After a preliminary look at BAAQMD's data, the primary drivers appear to be hydrogen sulfide, formaldehyde, diesel particulate matter, and perchloroethylene. This short list of drivers may change when updates to the BAAQMD data are complete.

b) The description of "Sewage Treatment Facilities" (Section 2.5.1.8, beginning on page 2-16) is inaccurate and needs to be corrected. For your reference in updating the text in this proposed Rule and for future documents, we have attached the abridged edition of the "Layperson's Guide to California Wastewater" prepared by the Water Education Foundation for use as a public information tool. We will deliver hard copies of the full document to your staff to be used as a resource going forward.

   We recommend the following edits in this section:
   - The text under Tertiary Treatment references disinfection. Disinfection is a separate treatment process. That text should be split, starting a new bullet dedicated to disinfection.
   - Under "Fugitive Emissions," equalization basins are referenced and assumed to be used as part of the typical treatment train, which is not accurate. These basins are used during wet weather when the influent flow is too large for the plant to process, so the plant can "equalize" the flow going into headworks using these basins. They are used as-needed primarily during the wet weather season, and in some locations only several days each year. "Lift stations" are also referenced in this section and are typically used to convey flows in the collection system versus from one unit process to the next. In general, lift stations are not used as most wastewater treatment facilities make use of gravity flow. Additionally, both lift stations and pumps within a treatment facility are not typically open to the air and therefore do not contribute to fugitive emissions.
   - Under "Stack Emissions," reference is made to aerobic digesters. No wastewater treatment facility in the Bay Area uses an aerobic digester, only anaerobic digesters are in use. Also, anaerobic digesters are described as "open aerated processes" which is the <u>opposite</u> of what anaerobic digestion is. Anaerobic digesters are fully enclosed vessels and digester gas is collected from the vessel. Finally, dryers are <u>not</u> used to dewater digested sludge - typically, belt filter presses, screw presses, or centrifuges are used for dewatering.

c) The second sentence and its footnote in Section 3.2.4.1.3 need to be deleted, as it is outdated information and no longer represents the full scope of wastewater treatment facilities in the Bay Area:

   ~~*A survey of wastewater treatment facilities in the Bay Area indicated that there are at least 20 facilities ranging in size from a discharge rate of 0.1 to greater 30 million gallons per day (Pacific Institute, 2009)*[2] .~~

d) BACWA proposes the following addition to Section 3.2.4.1.3, page 3.2-30:

   If it is determined that affected facilities, primarily sewage treatment facilities, exceed the health risk requirements in Rule 11-18 and a decision is made to install a carbon

adsorption unit or thermal oxidizer, then it would likely take months, possibly years, to provide engineering specifications, acquire financing, purchase and deliver the necessary equipment, complete Air District permit evaluations, and undergo any necessary environmental analyses, as well as obtain local Board and rate payer approvals.

It is critical to acknowledge that the planning process for implementation of reduction measures to include communication with a wastewater treatment facility's Board and rate payers.

e) Under Section 3.5.2.2.5 (Wastewater Treatment Regulations), delete the following text, as the Regional Water Quality Control Board is the entity that issues discharge permits to municipal wastewater treatment facilities:

~~*In addition to federal and state restrictions on wastewater discharges, most incorporated cities in California have adopted local ordinances for wastewater treatment facilities. Local ordinances generally require treatment system designs to be reviewed and approved by the local agency prior to construction."*~~

f) Biosolids are regulated under the Clean Water Act via Title 40 of the Code of Federal Regulations [CFR], Part 503. A description of Rule 503 should be added to Section 3.5.2.1.1.

2. Proposed Rule Discourages Biogas Production (Rule)

While the purpose of the proposed Rule 11-18 is to reduce toxic air contaminants and protect public health, it may discourage the production and beneficial use of biogas for the generation of renewable energy or fuel, resulting in a wasted (flared) resource. Most BACWA members already beneficially use biogas generated from anaerobic digestion of sewage sludge or from nearby landfills to generate renewable electricity. Not only does this practice offset the treatment plant's dependence on fossil fuel based energy, it reduces the resulting anthropogenic greenhouse gas emissions.

The production of biogas, production of renewable energy, and the reduction of greenhouse gas emissions support statewide greenhouse gas reduction goals set under Assembly Bill 32 and Senate Bill 32, as well as BAAQMD's Clean Air Plan. Furthermore, the State Air Resources Board would like to see wastewater treatment facilities accept additional organic waste streams (specifically, diverted food waste and fats, oils, and grease from landfills) for co-digestion with sewage sludge to increase generation of biogas, in turn increasing renewable energy/fuel production in support of newly adopted mandates under Senate Bill 1383 (reducing methane emissions across the state). However, the proposed Rule 11-18 restricts the beneficial use of biogas since its combustion contributes to a slight increase in toxic air contaminants, potentially forcing wastewater treatment facilities to flare the biogas (wasting a resource and still combusting it) and purchase fossil fuel based electricity or natural gas. This would result in an increase in fossil fuel based greenhouse gas emissions statewide and is in direct contradiction with the Governor's goals for 2020, 2030, and beyond.

BACWA recommends BAAQMD consider providing exceptions in Rule 11-18 for projects that contribute toward achieving state goals for reductions in greenhouse gas emissions through the diversion of organic waste from landfills, and increased production of biogas

for the generation of renewable energy or transportation fuel.

3. Cross-Media Impacts Must Be Considered (EIR)

Wastewater treatment facilities are regulated by multiple governmental agencies whose goals can result in contradictory impacts to the municipal wastewater sector. While regulatory actions may be seen as effective when each media (air, water, land) is addressed separately, the deficiencies become evident when the regulations are viewed holistically for protecting the environment and public health. BACWA submitted a letter to BAAQMD in June of 2014 detailing the impact cross-media issues can have on wastewater treatment facilities.[1] There are increasing concerns about cross-media impacts and the potential operational and financial effects they will have on facilities that are trying to provide an essential public service while maintaining compliance with regulations supporting contradictory goals.

BACWA appreciates the reference in Section 3.5.4.3 (Conclusion, page 3.5-22) considering the impacts to water quality from the installation of air pollution control equipment:

"Based upon the above considerations, water quality impacts from installing most types of air pollution control equipment that use water as part of the control process would not exceed applicable water quality significance thresholds and, therefore, are concluded to be less than significant."

BACWA recommends BAAQMD further address cross-media impacts (considering impacts of this rule on the use of biogas from the anaerobic digestion of sewage sludge and food waste, as well as impacts to the use of digested sludge or biosolids) in the proposed Rule 11-18, as well as in future proposed regulations.

Thank you for the opportunity to comment on the proposed Rule 11-18. BACWA supports BAAQMD's intent to protect the Bay Area's air quality, and asks BAAQMD to carefully address BACWA's concerns. We would be happy to discuss any questions regarding these comments. Nohemy Revilla and Randy Schmidt, BACWA AIR Committee Co-Chairs, can be reached at NRevilla@sfwater.org and RSchmidt@centralsan.org, respectively.

Sincerely,

David R. Williams

David R. Williams
BACWA Executive Director

Cc: BACWA Executive Board
Nohemy Revilla, BACWA AIR Committee Co-Chair
Randy Schmidt, BACWA AIR Committee Co-Chair
Courtney Mizutani, BACWA AIR Committee Project Manager
Sarah Deslauriers, BACWA AIR Committee Project Manager

[1] See http://bacwa.org/wp-content/uploads/2014/06/BACWA_Cross-Media-Letter.pdf

Abridged Edition

LAYPERSON'S GUIDE TO

California Wastewater

Prepared by the Water Education Foundation

Contents

The unabridged guide includes these additional sections:

- **Legal and Regulatory Primer**
- **Collection and Conveyance**
- **Treatment and Disposal**
- **Current Challenges**
- **Case Studies**

The *Layperson's Guide to California Wastewater* is prepared and distributed by the Water Education Foundation as a public information tool. It is part of a series of Layperson's Guides that explore pertinent water issues in an objective, easy-to-understand manner.

The mission of the Water Education Foundation, an impartial, nonprofit organization, is to create a better understanding of water resources and foster public understanding and resolution of water resource issues through facilitation, education and outreach.

For more information contact:

WATER EDUCATION
FOUNDATION

717 K Street, Suite 317
Sacramento, CA 95814
Phone: (916) 444-6240
Fax: (916) 448-7699
www.watereducation.org
www.aquafornia.com

Editor's Note

This is an abridged version of the *Layperson's Guide to California Wastewater*. The complete 28-page guide is available through the Water Education Foundation website under the Products Link at www.watereducation.org

Often referred to as mini-textbooks, the Foundation's popular Layperson's Guide series offers readers an easy-to-understand, broad overview and perspective on a variety of important water topics. The pamphlets, which range from 20 to 28 pages, are periodically updated to include the most recent information. The guides can be purchased as a set or individually. Currently 17 titles are available.

Printed 2013

ISBN-13: 978-1-61948-003-2 – Abridged Edition
ISBN: 978-1-61948-002-5 – Unabridged

On the Cover:

The secondary clarifier at the Western Water Recycling Facility.
Photo by Western Municipal Water District, Michael J. Elderman Photography

Introduction

Several years ago when the *British Medical Journal* polled its readers, including Americans, on the most important medical milestone since 1840 (the year the journal was first published), they chose the introduction of clean water and sewage disposal – "the sanitary revolution." Imagine that sanitation got more votes than the discovery of antibiotics and the development of anesthesia.

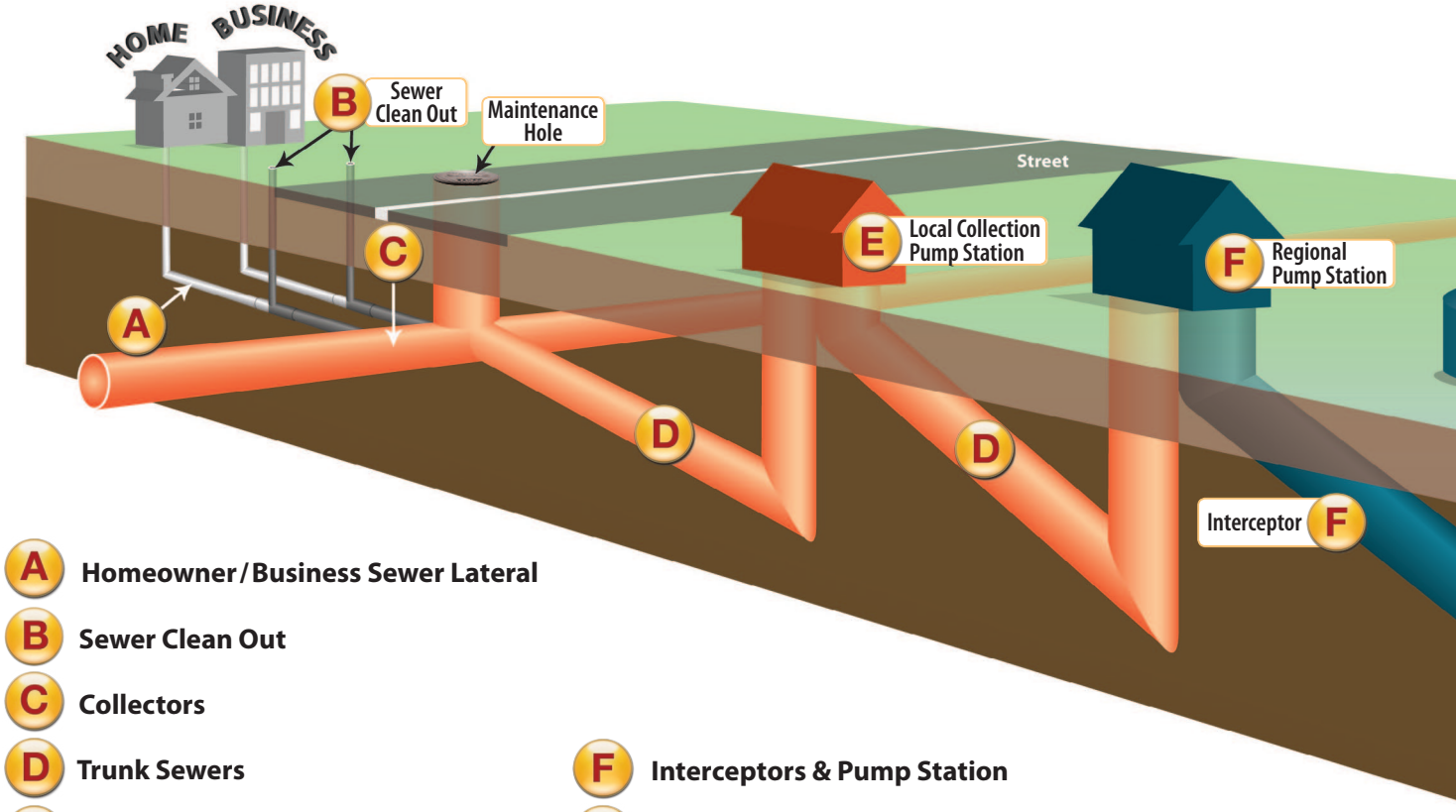
In the developing world, inadequate sanitation remains a major problem. According to a report, "Progress on Drinking Water and Sanitation 2012," issued by UNICEF and the World Health Organization, "Only 63 percent of the world now have improved sanitation access, a figure projected to increase only to 67 percent by 2015, well below the 75 percent aim in the Millennium Development Goals. Currently 2.5 billion people still lack improved sanitation." Water For People cites similar statistics.

But what is the situation on the home front?

According to 2012 statistics from the U.S. Environmental Protection Agency (EPA), in the 40 years since its passage [in 1972], the Clean Water Act has kept tens of billions of pounds of sewage, chemicals and trash out of the nation's waterways; 92 percent of Americans have round-the-clock access to safe, clean drinking water that meets national health standards; and more than two-thirds of America's assessed waterways meet water quality standards.

In California, 100,000 miles of sanitary sewers and more than 900 wastewater treatment plants manage the approximately 4 billion gallons of wastewater generated every day by the state's citizens, businesses and visitors, according to the 2012 California Infrastructure Report Card prepared by the American Society of Civil Engineers (ASCE). "This engineered wastewater infrastructure serves their ratepayers and customers and visitors very well in their mission to protect public health and the environment," the report card noted in an excerpt.

The state's wastewater collection, conveyance, treatment, reuse and disposal services are provided primarily by a variety of public agencies, including cities, counties, joint powers authorities and special districts such as sanitary, sanitation and community services districts. In addition, there are some privatized systems, and where treatment plants are not available or feasible, such as in sparsely populated rural areas, individualized on-site sanitation systems like septic tanks and leach lines are used.



Very complicated and technical state and federal government laws and regulations protect the water quality of California's more than 1.6 million acres of lakes, more than 1.3 million acres of bays and estuaries, 211,000 miles of rivers and streams and 1,100 miles of coastline.

Depending on geography, a mixture of pipes, hydraulic structures and pumping facilities collect and convey the wastewater from residences, schools and businesses to treatment facilities that use physical, biological, chemical and advanced processes to reduce or remove organic matter, solids, nutrients, disease-causing organisms and other pollutants before discharging the treated wastewater into rivers, oceans, lakes, and other water bodies or onto land.

Used water (wastewater) from activities such as flushing toilets, bathing and washing clothes contains harmful bacteria and viruses that can cause diseases. Before being returned to the environment, it must be cleaned (treated) to meet standards set by state and federal government agencies.

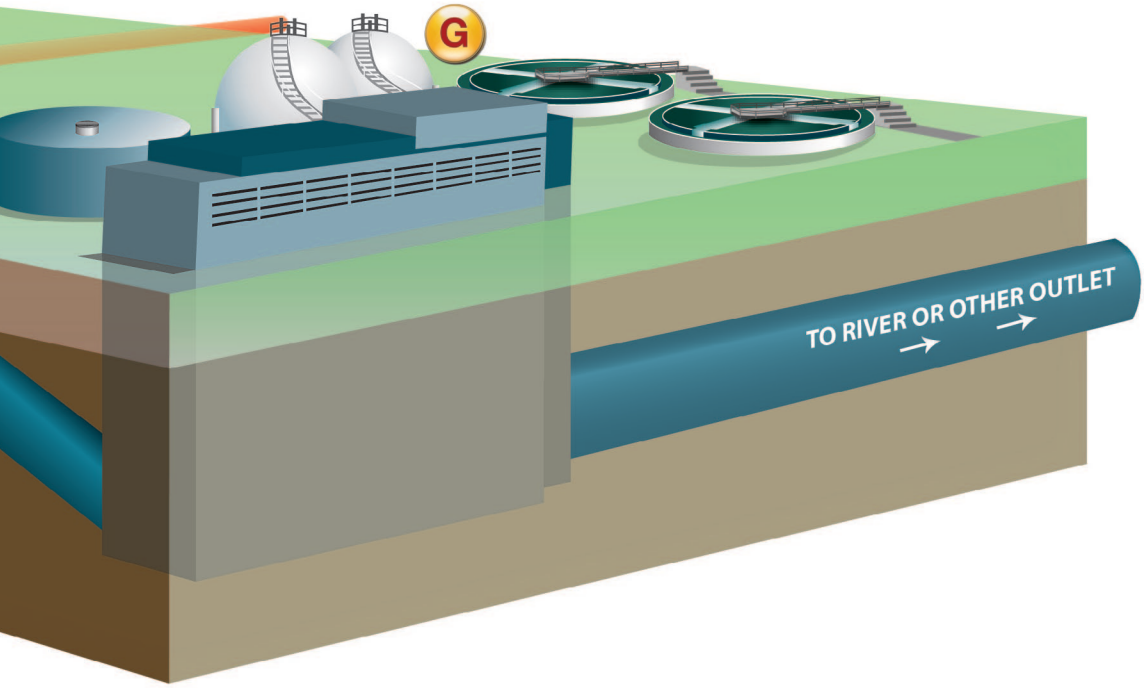
Mother Nature has natural cleansing processes of sunlight, plants, bacteria and filtration by soils. However in a heavily populated world, Mother Nature's capabilities are not enough. As a result, wastewater treatment systems are essential. They typically work by enhancing, speeding up and simulating the filtration, decomposition and disinfection processes that occur naturally in the environment.

With sanitation as vital today as in the past, the California wastewater community is at a crossroads.

Infrastructure designed and built a generation ago with funding from the federal government must be expanded, upgraded or rebuilt to provide the most reliable and efficient services possible. The large federal and state grants of past decades are generally not available today, so new sources of financing mechanisms must be found to pay for these large capital improvement projects with as little impact to ratepayers as possible.

Increasing population demands on current system capacities and maintaining and upgrading facilities to comply with current and future regulatory requirements, including emerging contaminants, are among the other issues facing the wastewater community. Climate change and extreme weather events are also concerns that may lead to the need for future projects.

This guide, part of an ongoing series by the Water Education Foundation, provides an overview of basic background information on California laws and regulations, wastewater collection and treatment processes, history, current challenges, and case studies. Related issues are discussed in the *Layperson's Guide to Water Recycling*.



In this diagram for the layperson, the general process of wastewater collection, conveyance, treatment and disposal are illustrated.

Glossary

Biosolids – The solid organic material that is separated during the wastewater treatment process, treated according to regulations to the point that it is a usable product, and then recycled.

Clarify – To make clear or pure by separating and eliminating suspended solid material.

Coagulation – The clumping together of solids so they can more easily be settled out or filtered out of water.

Collection System – The sewer system of pipes that carries wastewater from homes and businesses to a treatment plant or reclamation plant.

Combined Sewer – A wastewater collection system that carries both raw sewage and stormwater to a treatment plant.

Disinfection – Final step in the treatment process. Commonly, chlorine is added to the treated wastewater to kill disease-causing organisms. There are other alternatives for achieving disinfection, including ultraviolet light.

Effluent – Treated wastewater flowing out of a treatment plant.

Filtration – The process of water passing through porous material such as sand or synthetic membranes to trap and remove particles.

Influent – Untreated wastewater that enters a wastewater treatment plant.

Primary Treatment – First major treatment in a wastewater treatment facility that removes solids and floating matter using screening, skimming and sedimentation.

Publicly Owned Treatment Works (POTWs) – Public wastewater systems built, operated and maintained by government agencies. They include sewer pipes, maintenance holes (formerly called manholes), pumps, treatment plants and other related infrastructure.

Reverse Osmosis – A method of removing very small particles, including salts or other ions, from water by forcing water through a semi-permeable membrane.

Secondary Treatment – The biological portion of wastewater treatment that relies on the growth of micro-organisms to clean the wastewater after primary treatment. Several different types of secondary processes can be used, including activated sludge, trickling filters, pond systems and wetland systems.

Sedimentation – The settling of solids in a body of water using gravity.

Sludge – The organic solid waste material that settles out in the wastewater treatment process. If sludge is converted into a usable end product, it is no longer called sludge.

Tertiary Treatment – Additional treatment processes used to clean wastewater even further following primary and secondary treatment. Normally implies the removal of nutrients, such as phosphorous and nitrogen, and a high percentage of suspended solids. Also known as advanced treatment.

Wastewater – The mixture of used water and human waste carried away by drains and sewers.

Water Recycling – The treatment of wastewater to make it suitable for a beneficial reuse, such as landscape irrigation or groundwater recharge. A separate *Layperson's Guide to Water Recycling* has been published by the Water Education Foundation and is available at www.watereducation.org

Resources

Bay Area Clean Water Agencies – A local government agency created by a joint powers agreement in 1984. Its membership includes wastewater agencies that provide sanitary sewer services to more than 7 million people living in the nine-county San Francisco Bay Area. Principal members include the Central Costa County Sanitation District, the city of San Jose, East Bay Dischargers Association, East Bay Municipal Utility District and San Francisco Public Utilities District. http://bacwa.org

California Association of Sanitation Agencies – A statewide trade association of municipalities, special districts and joint powers agencies that provide wastewater collection, treatment and water recycling services. CASA was founded in 1955 and CASA members represent more than 90 percent of the sewered population of California. www.casaweb.org

Central Rural Water Association – Provides on-site technical assistance and specialized training for rural water and wastewater systems. http://www.calruralwater.org

Central Valley Clean Water Association – A regional association representing wastewater treatment and collection system agencies in the Central Valley. http://www.cvcwa.org

California Water Environment Association – A statewide nonprofit public benefit association whose mission is to protect the water environment by educating, training and certifying the competency of individuals who work in the water quality field. Approximately 80 percent of CWEA's more than 9,000 members work for municipal wastewater agencies and collection systems, both large and small, throughout California. www.cwea.org

Southern California Alliance of Publicly Owned Treatment Works – A nonprofit corporation of more than 90 wastewater treatment and collection system agencies and one large regional water treatment agency. Together, its membership collects and/or treats the wastewater for more than 16 million Southern Californians in seven counties. www.scap1.org

My Water Quality Website – Sponsored by the California Water Quality Monitoring Council, a joint partnership between the California Environmental Protection Agency, the California Natural Resources Agency, and several stakeholder organizations from both inside and outside state government. State legislation in 2006 mandated water quality monitoring and assessment activities be coordinated and information be made available to decision makers and the public via the Internet. http://www.CaWaterQuality.net