

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT (Vincent Christian)
MEETING DATE: November 28, 2011

ITEM: 9

SUBJECT: **Water Recycling: Status and Trends in the San Francisco Bay Area – Information Item**

DISCUSSION: As its name implies, wastewater has historically been viewed as a “waste” rather than a resource. In California, today’s view of wastewater is changing. If treated and recycled properly, it can provide a safe alternative to potable water for approved uses and promote sustainable use of our groundwater and surface water supplies. This is especially important in our region where existing sources of potable water may not be able to meet future demands, particularly during drought conditions. In addition to providing local benefits, regional water recycling benefits the entire State by leaving more water upstream for other uses, such as agriculture, industry, and environmental enhancement. As an added benefit, water recycling can reduce the amount of wastewater, along with its associated pollutants, discharged to surface waters.

The volume of wastewater annually generated in our region is about 200 billion gallons, or about 600,000 acre-feet per year (AFY). This is roughly equivalent to twice the volume of San Francisco’s Hetch Hetchy Reservoir, or about a tenth of the volume of San Francisco Bay. Wastewater treatment plants in the region currently recycle about 10% of the water they treat while discharging the remaining 90% to the Pacific Ocean, the Bay, or its tributaries. Recycled water is primarily used for landscape irrigation, industry, agriculture, and environmental enhancement.

Based on a recent Bay Area Clean Water Agencies’ (BACWA) survey, regional recycling rates are expected to double by 2030, to about 120,000 AFY. The largest projected growth areas are landscape irrigation and industry. While this is significant, it is still far short of what is possible. BACWA estimates that, by 2040, the potential market for recycled water in our region could be 1,000,000 AFY.

Impediments to water recycling in our region appear to be largely economic. Recycling projects typically need expensive infrastructure improvements both for any additional wastewater treatment needed to meet State Department of Public Health requirements and for the

distribution and pumping systems needed to transport recycled water to where it can be applied. Most recycling projects need State or federal funding or both in order to compete with existing water supplies that have established infrastructure. A recycling project must typically receive about half its capital cost from grants to be economically feasible, and current funding falls far short of California's needs. In fact, most recycled water currently applied in the region is used for industry and agriculture where the end user has paid for all or most of the infrastructure. Nonetheless, expanding the use of recycled water is generally going to be less expensive than developing new sources of potable water.

Another impediment to water recycling is ensuring that receiving waters are protected from salt. Recycled water tends to have higher salt concentrations than many existing supply sources because the human diet is high in salts, and those salts are not fully removed during treatment. If salt concentrations in a discharge exceed that of the receiving water, the discharge could degrade the water body. Treatment plants in our region discharge mostly to marine water bodies, so salt loading has generally not been a concern. Moving forward, the concern is to ensure protection of groundwater basins when recycled water is applied to land. For similar reasons, protecting groundwater from excessive nutrient loads is also a concern.

The State Board's Water Recycling Policy adopted in 2009 requires that salt and nutrient management plans be developed for all of the State's groundwater basins. Under the policy, local agencies are responsible for developing and funding plans that will ensure protection of groundwater basins, and the Regional Water Boards are responsible for reviewing the plans and adopting basin plan amendments where appropriate. Most local agencies are early in the development process, and we are currently providing guidance to these agencies to ensure the process goes smoothly, focusing on higher priority basins first.

The Water Recycling Policy also requires the Regional Water Boards to use their authority to the fullest extent possible to encourage the use of recycled water. The policy relies primarily on cooperative stakeholder efforts. As such, progress is largely dependent on the foresight of our communities. Luckily, most of our region's wastewater and water agencies are enlightened about the economic and environmental benefits of water recycling. Staff will continue to explore regulatory and non-regulatory ways of promoting water recycling in our region, and welcome your input in this important area.

**RECOMMEN-
DATION:**

This is an information item only, and no action is necessary.