



# Bay Area REGIONAL WATER RECYCLING PROGRAM

Newsletter No.2 · June, 1998

Bay Area Regional  
Water Recycling  
Program's Successes

Featured Project: South  
Bay Water Recycling  
Project

What is Water  
Recycling?

## Moving Closer to a Regional Water Recycling Program: Master Plan Committee Achievements

This issue of the Bay Area Regional Water Recycling Program's (BARWRP) Newsletter focuses on the work of the Master Plan Subcommittees and highlights some of the benefits of a regional water recycling program. There are several existing and many potential water recycling programs in the area that, if linked, could provide significant benefits to the Bay Area. BARWRP is developing the necessary groundwork to integrate these projects and share important water resources among Bay Area communities.

by Jim Opdenbrouw, Facilities Manager for General Electric. "Not only have we identified a drought-proof source of water, but we anticipate a reduction in our water bill. Recycled water is environmentally friendly and a good business decision."

The South Bay Water Recycling Program exemplifies on a smaller scale the benefits BARWRP will provide to the entire Bay Area. BARWRP brings multiple users together to mutually benefit from shared resources, a reliable water supply, and a healthier environment.

## Featured Project: South Bay Water Recycling Project

Since 1997, the area encompassing San Jose, Santa Clara, and Milpitas has been home to one of the most successful water recycling programs in the country. Spurred by a state mandate that requires the cities to reduce discharges to the Bay, the South Bay Water Recycling Program created a distribution system that provides 21 million gallons of recycled water a day for non-potable uses in golf courses, parks, business parks and agricultural land. The use

of recycled water, in turn, frees up potable water for other uses and helps the area maintain a reliable water source during droughts.

One of the program's biggest successes has been creating partnerships with area businesses to use the recycled water. Current customers include the San Francisco 49ers Football Training Facility, 3Com, Rolm Corporation, Cisco Systems, and General Electric. The success of these partnerships is best summarized

Developing a Regional Partnership to Maximize Bay Area Water Recycling



## Ongoing Studies Reveal Promising Opportunities

Developing Alternatives for implementing BARWRP is a complicated process. As part of the BARWRP Master Plan, the Project Team will assess thousands of different water recycling opportunities around the Bay Area and, from them, develop multiple alternatives.

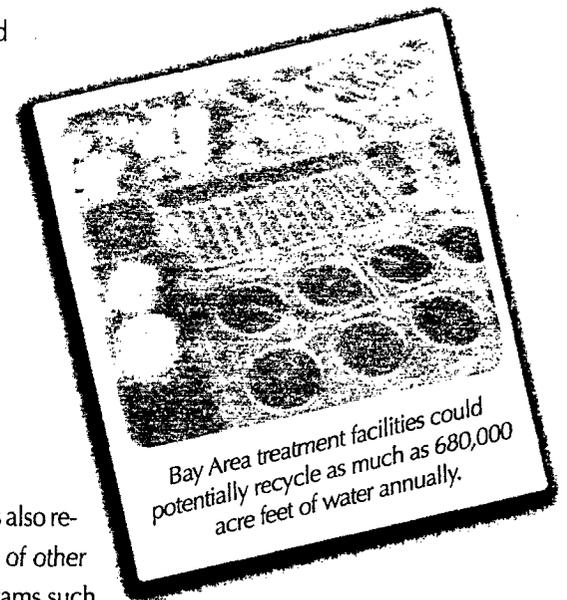
The final BARWRP Master Plan will present multiple alternatives for implementing the program that provide the largest range of benefits for the least possible cost.

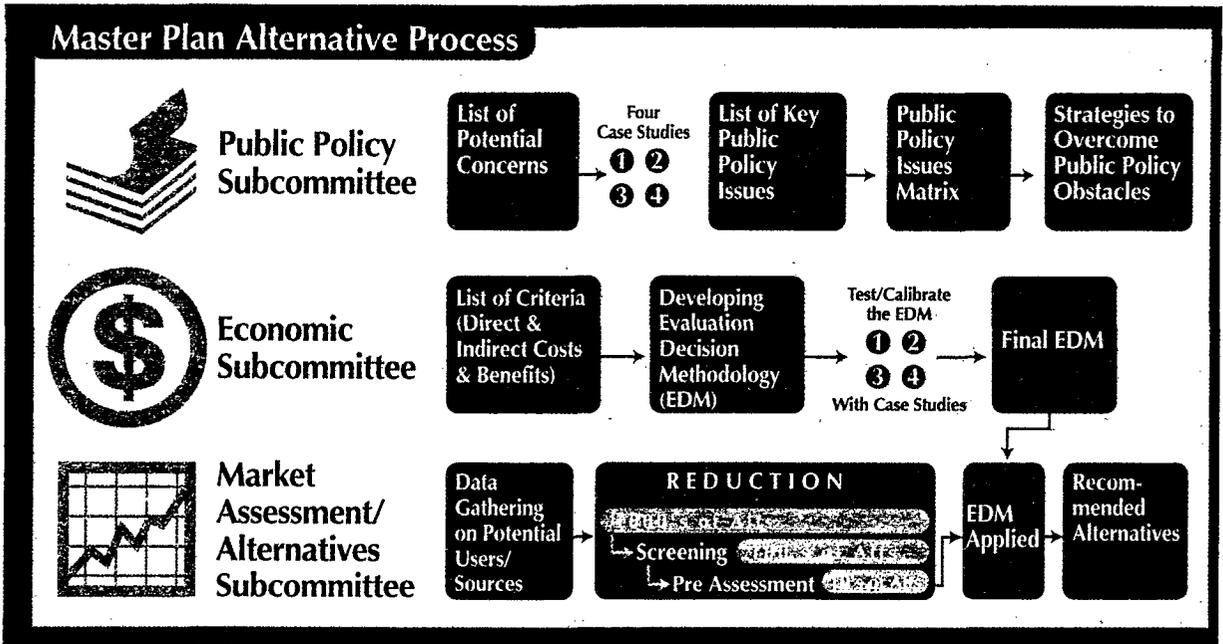
The development of the BARWRP Master Plan requires the assessment of complex issues and potential relationships. This work is the responsibility of the BARWRP's three technical subcommittees, each of which focuses on a specific area of expertise.

The Public Policy Subcommittee is reviewing public policy issues, institutional constraints, and public policy issues promoting water recycling (driving forces). Case studies, based loosely on potential local recycling projects, are being carefully evaluated so that strategies can be developed for overcoming obstacles to implementation. While these case studies or test cases are not actual projects, they serve as effective examples with which to evaluate public policy issues. Some of the issues identified so far include:

- State and federal water contracts
- Water exchanges and transfers
- Water supply reliability
- Cost effectiveness
- Public health, perception, and approval
- Water quality
- Federal and state regulations

The Subcommittee has also researched the development of other environmental utility programs such as the electrical and solid waste industries to identify comparable lessons that might apply to water recycling. Market factors and driving forces, for example, were found to be particularly important to developing a successful program. Some of the potential driving forces for BARWRP include business growth in Silicon Valley, CALFED objectives (CALFED is a consortium of state and federal agencies working together to develop water use plans for the San Francisco Bay and the Sacramento-San Joaquin River Delta.), preserving water quality in the Bay, and residential growth in the East Bay. Based on its findings, the committee will draft a report that presents strategies for overcoming public policy obstacles.





## Economic Subcommittee

Over the past few months, the Economic Subcommittee has developed an Evaluation Decision Methodology (EDM), a decision-making tool that assesses the costs and benefits of implementing a regional water recycling program. The EDM also analyzes indirect benefits, such as environmental enhancement and reduced wastewater discharge. The table below summarizes the issues the preliminary EDM will measure. As the table shows, the EDM will analyze the significant indirect and environmental benefits that regional water recycling provides.

Once the EDM is completed, it will be used to evaluate the alternatives that are developed by the Market Assessment/Alternatives Subcommittee. Presently, the committee is fine-tuning the EDM by testing it with sample case studies.

## Market Assessment/Alternatives Subcommittee

The Market Assessment/Alternatives Subcommittee recently published a Technical Memorandum that reported on its progress. A highlight of the committee's findings is that the potential demand for recycled water in the Bay Area is greater than 600,000 acre feet per year. They also found that treatment facilities could potentially generate as

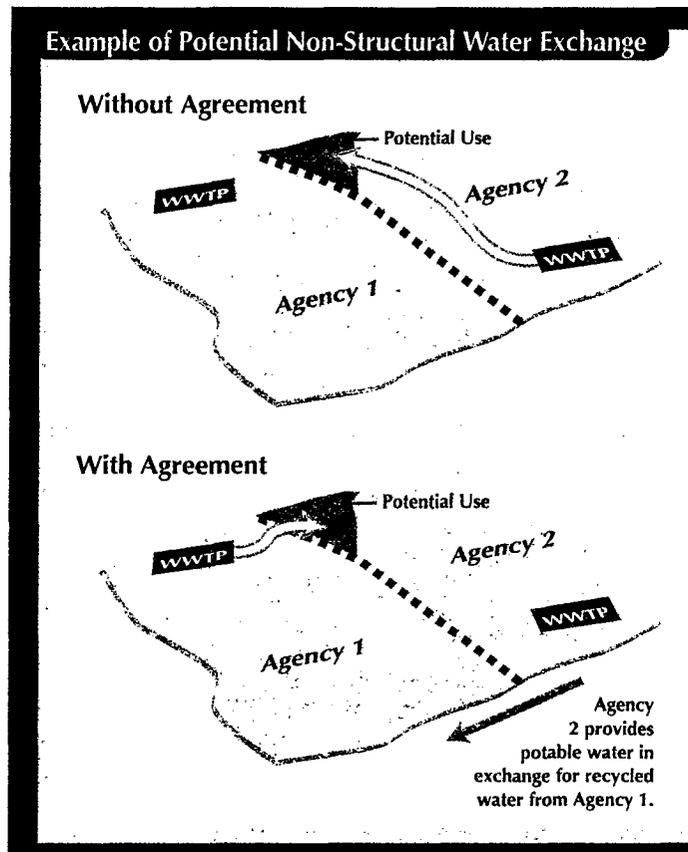
much as 680,000 acre feet of recycled water annually, which is almost 70% of the Bay Area's overall water demand. Beyond these findings, much valuable data was collected as part of the Market Assessment effort. For example, the committee identified and evaluated the following different types of potential demand:

- Parks, golf courses and cemeteries
- Agricultural irrigation
- Urban irrigation
- Commercial and Industrial use
- Streamflow augmentation
- Potable impoundment augmentation
- Groundwater recharge
- Wetlands restoration

Benefit	Direct	Cost
	<b>Wastewater Agencies</b>	
<ul style="list-style-type: none"> <li>• Avoided costs of alternate disposal</li> <li>• Revenues from alternative sources (water agencies)</li> </ul>	<ul style="list-style-type: none"> <li>Facilities improvements (plants and pipes)</li> <li>Operation and maintenance</li> </ul>	
	<b>Water Agencies</b>	
<ul style="list-style-type: none"> <li>• Avoided costs from potable water costs</li> <li>• Water demands displaced</li> <li>• Revenue from recycled water</li> </ul>	<ul style="list-style-type: none"> <li>Lost revenue</li> <li>Piping/metering changes</li> </ul>	
	<b>End Users</b>	
<ul style="list-style-type: none"> <li>• Reduced rates</li> </ul>	<ul style="list-style-type: none"> <li>Capital investments</li> <li>Operation and maintenance</li> </ul>	
	<b>Indirect &amp; Environmental</b>	
<ul style="list-style-type: none"> <li>• Increased reliability</li> <li>• Regional economic benefits</li> <li>• Wetland maintenance</li> <li>• Streamflow augmentation</li> <li>• Discharge reduction</li> <li>• Reduced surface water diversions</li> </ul>	<ul style="list-style-type: none"> <li>Potential loss of flows</li> <li>Potential mitigation of construction impacts</li> </ul>	
	<b>All Parties</b>	

To obtain input on the environmental enhancement opportunities identified in the initial Market Assessment process, the committee invited environmental groups and resource agency representatives to participate in an Environmental Enhancement Workshop. These stakeholders provided valuable feedback about potential environmental enhancement sites and recommended other opportunities to use recycled water to potentially contribute to streamflow augmentation and habitat restoration.

Findings from the workshop and the Technical Memorandum will be used to develop alternatives for connecting recycled water sources—the 27 wastewater treatment facilities—with the potential demands listed on



page 3. To do this, the committee will use a computer model that uses market assessment data, like the distance between sources and demands and conveyance costs, to determine the least cost and shortest distance connections between suppliers and potential users. The team will then consider nonstructural relationships that could foster the use of recycled water through the use of water transfers and other institutional exchanges across jurisdictional boundaries. Exchanges like the one to the left would allow Agency 1 to provide recycled water to Agency 2 in exchange for a portion of Agency 2's potable water supply.

The committee will combine the results produced from these methodologies to develop multiple alternatives for the BARWRP Master Plan.

## BARWRP Master Plan Public Outreach and Administration

### Communication Subcommittee

As part of ongoing outreach efforts for BARWRP, the Communications Subcommittee produces periodic newsletters, organizes presentations through an active speakers bureau, and displays a traveling exhibit around the Bay Area to explain and increase awareness of water recycling. The Subcommittee has also developed a survey to gauge the level of understanding of water recycling among public officials and decision makers. The survey will help to determine what level of public education is needed to develop support for BARWRP.

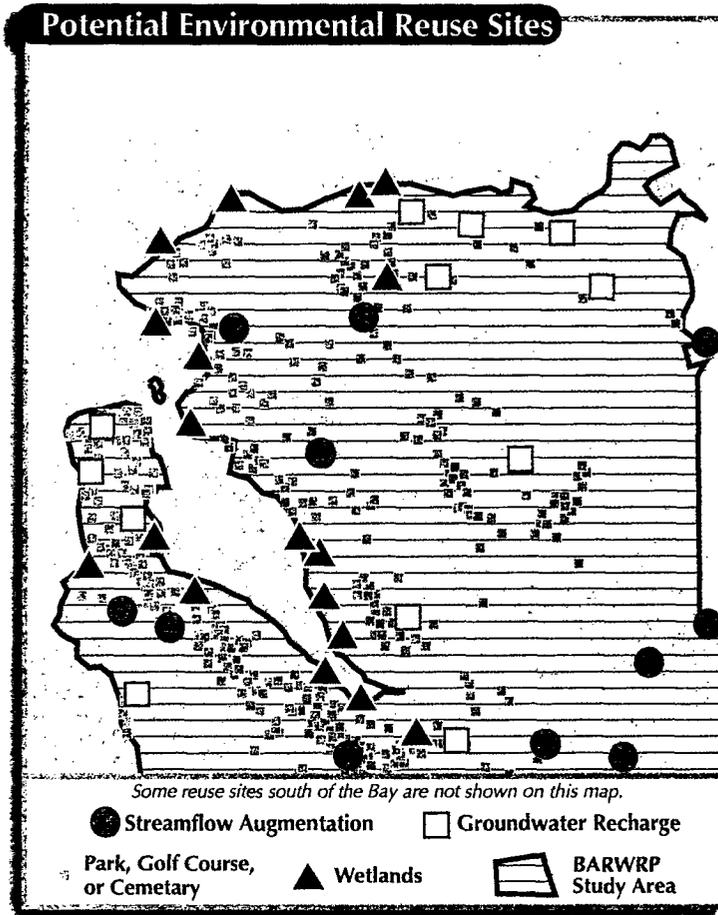
### Project Management Committee

The Project Management Committee (PMC) includes representatives from all of the participating agencies. (See back page for a list of participating agencies.) Together, the group establishes goals for the other Subcommittees and provides direction on the project. One early accomplishment of the PMC was the development of a Technical Memorandum that was submitted to the CALFED Bay-Delta Planning Process prior to the publishing of their Draft EIS. CALFED is a consortium of state and federal water agencies that have been working together for the last five years to develop a plan to protect the Bay/Delta and use water wisely throughout the Bay Area. The memorandum outlined how regional water recycling can play an important role in helping to manage the Bay-Delta's important resources by relieving some of the stresses placed on the Bay/Delta from municipal and other water demands. PMC representatives will continue to proactively communicate with CALFED representatives about the value and importance of recycled water in stabilizing potable water supply, providing environmental enhancement, and serving as a player in solving our state's water supply puzzle.

## How Can Recycled Water Be Used?

Recycled water is wastewater that's been treated to a level that makes it safe for many uses. Recycled water can be used for many purposes, including irrigation, watering golf-courses, augmenting streamflows, industrial purposes and blending with potable water in groundwater and reservoirs to be used for drinking water. Water that's used for these purposes undergoes several levels of treatment and must meet the state's strict water quality requirements.

Water recycling benefits the Bay Area because it can provide a reliable source of water for agricultural, industrial, recreational, and environmental enhancement uses. Using recycled water for these demands improves the water supply reliability of the entire Bay Area and may help avoid the need for increased import of fresh water to meet California's growing demands for water.



## BARWRP Promotes Cooperation Between Agencies

By developing water recycling at a regional level, BARWRP will combine the benefits of individual projects, distribute recycled water throughout the Bay Area and provide economic and environmental water resource benefits. By working together, water and wastewater agencies can eliminate duplication of services and provide recycled water to areas where programs haven't yet been developed. BARWRP will also promote water exchanges between water districts by letting one agency offset its use of potable water with recycled water and then sell its potable water rights to another water agency.

BARWRP can also help protect the environment. Recycled water can be used to increase flows in our rivers and streams, providing better habitat for fish and wildlife. Recycled water programs also help decrease the amount of wastewater discharged to the Bay by promoting alternate uses like irrigating golf courses and cemeteries.

BARWRP is working with Bay Area water and wastewater agencies to develop this innovative regional program (see back page for a list of participating agencies). Each agency brings important resources to the program, and stands to gain economic, environmental, and supply benefits from regional cooperation.

## BARWRP's Regional Partnership

The California Department of Water Resources, the U.S. Bureau of Reclamation, and 13 Bay Area water and wastewater agencies jointly sponsor the BARWRP. The current partners include:

- California Department of Water Resources
- Central Contra Costa Sanitary District
- City of Palo Alto
- City of San Jose
- City of Sunnyvale
- Delta Diablo Sanitation District
- Dublin San Ramon Services District
- East Bay Dischargers Authority
  - Union Sanitary District
  - City of Hayward
  - City of San Leandro
  - Oro Loma Sanitary District
  - Castro Valley Sanitary District
- East Bay Municipal Utility District
- San Francisco International Airport
- San Francisco Public Utilities Commission
- Santa Clara Valley Water District
- South Bayside System Authority
- U.S. Bureau of Reclamation
- Zone 7 - Alameda County Water Agency

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## Who We Are

Developed by a consortium of local, state, and federal water and wastewater agencies in 1993, the mission of the Bay Area Water Recycling Program is to develop a regional partnership to maximize Bay Area water recycling. The BARWRP Feasibility Study, completed in 1996, shows that a regional approach to water recycling can significantly supplement the Bay Area's existing water supply, help the environment, and enhance local awareness of water conservation and the need for recycled water. The program includes 9 Bay Area counties with 27 wastewater treatment plants. The program is now developing a Master Plan to link the Bay Area's potential water recycling users and suppliers to maximize potential benefits.



## For More Information

Members of the BARWRP team are available to talk to your group or agency. To schedule a presentation about the BARWRP, please contact Project Office at (510) 251-2888 ext. 3402. Other questions about the project should be directed to Randy Raines, Program Coordinator, at (925) 299-6733 or visit the project web page at [www.recyclewater.com](http://www.recyclewater.com).



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