Exploring Alternative Ways to Expand Use of Recycled Water

Why the Napa Sanitation District is exploring the expansion of its Water Recycling Program

California has long faced the challenge of allocating a fixed water supply among a growing population with diverse needs. In many cases, there just isn't enough water to go around. The Napa Sanitation District is exploring alternative ways to extend the delivery of recycled water for irrigation and to offset dependency on groundwater and surface water. We invite you to become familiar with and comment on the various strategies and potential solutions outlined in a long term planning document under consideration, called the *Recycled Water Strategic Plan*.

The Napa Sanitation District Board will consider potential revisions in early 2006. Written comments on the proposed use of recycled water and the *Recycled Water Strategic Plan* are due by December 16, 2005.

Background

The Napa Sanitation District owns and operates the Soscol Water Recycling Facility (WRF) south of the City of Napa. Currently, treated wastewater is sent to the Napa River during the wet season (November 1 through April 30). During the dry season (May 1 through October 31), the water is reclaimed and then distributed for reuse to local vineyards, industrial parks, and golf courses. The recycled water produced at the Soscol WRF is disinfected tertiary quality, which is the highest quality recognized under the Department of Health Services, Title 22 requirements.

The District and its engineering consultants have developed a *Recycled Water Strategic Plan* to explore options to maximize the recycling of wastewater produced at the Soscol WRF to provide the following benefits to the community by addressing the area's urgent water supply and wastewater disposal issues:

- Assurance that the highest quality water is reserved for the highest quality use, public drinking water
- Decreased reliance on dwindling groundwater supplies
- Increased availability of recycled water for irrigation in water-short areas
- Prevention or postponement of costly water supply projects
- Enhancement of the Bay-Delta System by reducing dependence on the North Bay Aqueduct
- Broader rate base for the District with more recycled water users
- Reduction of emphasis on the National Pollutant Discharge Elimination System (NPDES) permit for river discharge and its associated costs and uncertainty

Recycled Water Strategies

The Strategic Plan developed the following seven recycled water distribution strategies to represent the range of interests relevant to the District:

1) **Recycle All Water Produced**
   - Treat all influent wastewater to recycled water standards
   - Store all water produced
   - Distribute water through pipelines to landscape, agricultural and industrial users
2) **Recycle Enough to Meet NPDES Permit Requirements**
   - Deliver recycled water to sufficient recycled water users during the dry season in order to reliably meet the dry weather discharge prohibition
3) **Maximize Use of Existing Storage (Optimize Largest Users)**
   - Maximize use of existing storage facilities (have water available in ponds at beginning of irrigation season and empty ponds prior to start of river discharge season)
   - Minimize volume of treated effluent discharged to the Napa River
   - Deliver recycled water to the largest users
   - Maximize the number of paying customers
4) **Maximize Use of Existing Storage (Least Pipeline Cost)**
   - Maximize use of existing storage facilities (as in Strategy 3)
   - Minimize the capital outlay for pipeline construction

For more information, call (707) 258-6000. The complete *Recycled Water Strategic Plan* document and other project information is available online at **www.NapaSanitationDistrict.com**.

5) **Deliver Recycled Water to MST Area**
   - Deliver recycled water to the MST area as quickly as possible
   - Provide recycled water, primarily for golf course and vineyard irrigation, to reduce the groundwater deficit in the area
6) **Deliver Recycled Water to Carneros Area**
   - Deliver recycled water to the Carneros area as quickly as possible
   - Provide recycled water for agricultural irrigation to improve water supply conditions in the area
7) **Maximize Use of Existing Storage (Augment Water Supply)**
   - Maximize use of existing storage facilities (as in Strategies 3 and 4)
   - Focus on augmenting water supply in water-short areas of Napa County
   - Maximize the volume of recycled water delivered to both the MST and Carneros areas

Photo: Bill Gaffney

Napa currently uses recycled water on vineyards, golf courses and other landscaping.

Evaluation of Strategies

Each of the seven strategies has a different focus and achieves different goals for the District. Some of these achievements can be quantified, such as reduction in river discharge, volume of recycled water supplied to water-short areas, construction costs, and operations and maintenance (O&M) costs. Other benefits are intangible in that they cannot be quantified. These include public and stakeholder acceptance, environmental benefits, and rapid and simple implementation.

A comparison of the recycled water strategies was completed based on both the quantifiable and intangible benefits. The strategies and evaluation criteria were presented to the District Board of Directors in February 2005. The Board indicated that costs to sewer customers is paramount and must factor heavily into any recycled water planning efforts. The Board is also interested in augmenting water supply in the community.

Embracing the two priorities, the Board expressed a desire to certainly implement Strategy 2, as it is necessary to meet state requirements for protecting the Napa River environment. The Board has also expressed an interest in the possible implementation of Strategy 3, as it calls for minimizing the amount of treated wastewater discharged into the river, while delivering recycled water to the largest users, maximizing the number of paying customers and using existing storage.

The District is now entering a period of gathering public input, evaluating interest in recycled water from potential users and exploring funding opportunities (such as state and federal grants as well as local sources).

Recycled Water Quality

Recycled water produced at the Soscol WRF is currently being used at 23 sites, including seven sites for vineyard irrigation and the remaining sites for turf grass and landscape irrigation. The users at these sites have been satisfied with the quality of recycled water delivered to them.

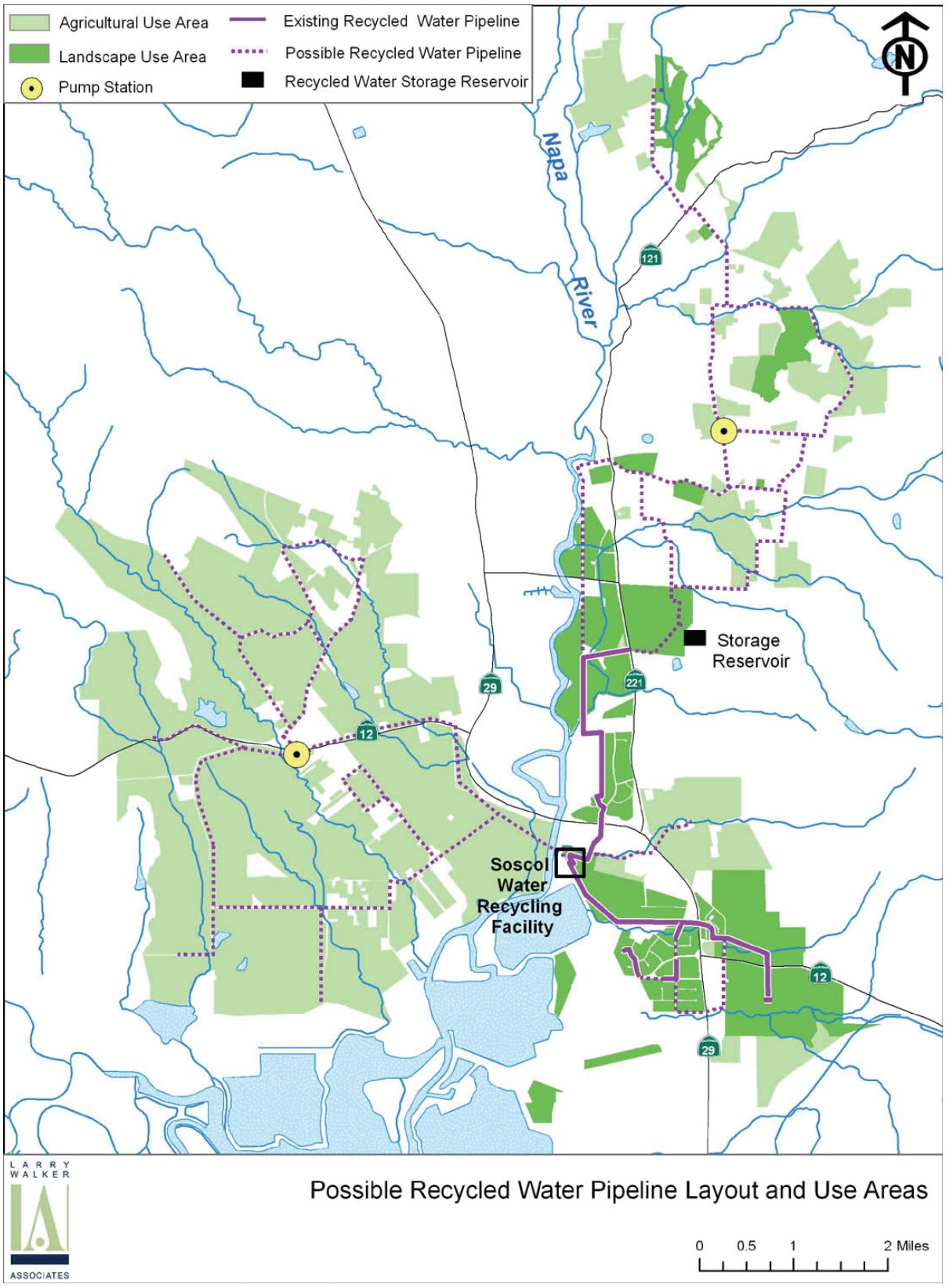
In addition, the California Department of Health Services (DHS), along with other public health experts and recent national scientific studies, confirm that recycled water is safe for the uses outlined in the *Recycled Water Strategic Plan*. DHS and the California Regional Water Quality Control Board carefully regulate the treatment and use of recycled water. These agencies create and enforce some of the strictest water quality regulations in the world – they govern production, transport and use, as well as the prevention of runoff and cross connections between potable and recycled water systems.

The Napa Sanitation District's Soscol Water Recycling Facility meets these regulations (Title 22) by providing a high-quality, tertiary level of treatment and following prescribed use criteria. Recycled water is already a valuable resource that augments the area's water supply and preserves precious drinking water for human uses.

How to Submit Your Comments

Comments are due by 5 PM, December 16, 2005. Mail or fax your written comments on the proposed *Recycled Water Strategic Plan* to:

Recycled Water Strategic Plan
Napa Sanitation District
P.O. Box 2480
Napa, California 94558
Fax: (707) 258-6048



*The dotted lines on the map show a variety of pipeline alternatives that are being considered in the **Recycled Water Strategic Plan**. Shaded areas show potential locations for agricultural and/or landscape uses. Final pipeline routes and areas of use will be determined after community interest and funding sources are identified.*

FREQUENTLY ASKED QUESTIONS

When will the project be built?
Once a recycled water distribution strategy is adopted and funding is secured, a timeline can be established for project implementation. The system will be expanded gradually in phased construction. Some projects could be started within the year. Current plans call for full project implementation by 2020.

How much will it cost and how will it be paid for?
The Napa Sanitation District Board is reviewing all seven distribution strategies to determine which is most feasible; the preliminary strategy project cost ranges from $2 to $92 million.

The Recycled Water Program can not be expanded at the sole expense of the District ratepayers. It is intended that Program expansion be paid for by multiple sources, such as state and/or federal grants, connection fees, benefit assessment district(s), user fees, and other sources of funding.

What kind of grant funding is the District currently pursuing?
The District has applied for five separate state grants to fund recycled water projects. In addition, the District is working with other North Bay agencies on potential federal funding.

Where are we in the process?
Currently the District Board is interested in hearing from the public, potentially affected property owners and potential recycled water users. Written comments on the Recycled Water Strategic Plan are due to the District by December 16, 2005. The Board will consider potential revisions to the Strategic Plan in early 2006. Regardless of which strategy is implemented, an environmental review will be conducted as required by CEQA (the California Environmental Quality Act).

Will using recycled water be mandatory?
The District typically negotiates User Agreements with each of its recycled water customers. The agreement specifies a minimum amount of recycled water delivered per year and the cost of the water and the term of the agreement, which may be up to 20 years. Because of the high cost of water recycling facilities (mainly pipelines), the use of User Agreements ensures that projects are economically feasible for the District.

Will recycled water users lose their water rights (to groundwater or surface water sources)?
No; as noted in Section 13551 of the California Water Code, the use of recycled water shall not cause any loss or diminution of any existing water right.

Where else is recycled water used?
There are many successful recycled water projects throughout California, the United States and around the world. For example, Monterey County farmers use recycled water for irrigating food crops. In Sonoma County over 6,400 acres of farmland and vineyards are irrigated with recycled water. Paramount's Great America, in Santa Clara County, uses recycled water to irrigate the amusement park's landscaped areas. In California alone, recycled water is used at more than 400 parks and playgrounds and 300 schools. In Napa, more than 1,500 acres of vineyards, golf courses and landscaping are already being irrigated with recycled water.

What is the quality of the water?
Napa's recycled water is treated to meet or exceed California Title 22 "disinfected tertiary recycled water" standards. That means it is the highest quality recycled water for its intended purpose of landscape and crop irrigation, and can also be used for such things as fire fighting, equipment washdown and in cooling towers.

Where will the pump stations be located, what will they look like and will they be noisy?
Booster pumping stations would be similar to typical municipal water supply well pumping stations. They normally take up an area in the range of 400 to 800 square feet. The location could be anywhere along the length of a given pipeline segment.

Stations would typically be screened with concrete block or other type of appropriate fencing for the location. There would be an entrance gate for maintenance vehicle access. They can be designed to blend into surrounding environments.

Noise levels from electric motor pumps would be similar to a swimming pool pump and are typically not a nuisance provided the set-back from residential areas is adequate.

What is Napa doing to conserve water?
Napa has an aggressive water conservation effort that includes a low-flow toilet program, water-efficient washing machine rebates, home audit surveys, restaurant faucet nozzle replacement programs and commercial landscape irrigation best management practices. To date, about 85% of Napa's water customers are using low-flow toilets.

Is the recycled water quality appropriate for vineyard irrigation?
Recycled water quality varies at each treatment plant; the UC Cooperative Extension is doing a study of vineyard impacts associated with use of the District's recycled water. Seven vineyards in the Napa area have been successfully irrigating with the District's recycled water. Study results will be available in the spring of 2006.