



TM #5 – City of Sunnyvale Recycled Water Pricing Recommendations

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RE: City of Sunnyvale Recycled Water Pricing Recommendations

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Background

This memorandum presents recycled water pricing recommendations for the City of Sunnyvale. The recommendations were developed in support of the City's Feasibility Study for Recycled Water Expansion, recently prepared by HydroScience Engineers (HSe). The recommendations were developed by Bartle Wells Associates (BWA) working as a subcontractor to HSe and incorporate preliminary input from the City.

General Recycled Water Pricing Objectives

The City faces a number of competing objectives regarding recycled water pricing. Higher rates generate more revenue per unit, while lower rates provide more financial incentive to induce new customers to transition to recycled water use. From a strictly financial perspective, recycled water rates should be set to maximize long-term revenues accounting for the impacts of rates on the volume of recycled water sales. Ultimately, the City needs to make a policy decision regarding what level of recycled water rates best achieve a balance of City objectives. As such, this memo recommends a range of recycled water pricing for City consideration.

Recycled Water Is an Indirect Source of Potable Water Supply

BWA recommends the City continue to account for its recycled water system as a component of the City's water enterprise, similar to any other potable water supply project. The City's recycled water system serves as an indirect source of potable water supply as the transition from potable to recycled water use frees up potable supply to the benefit of all existing and future potable water customers.

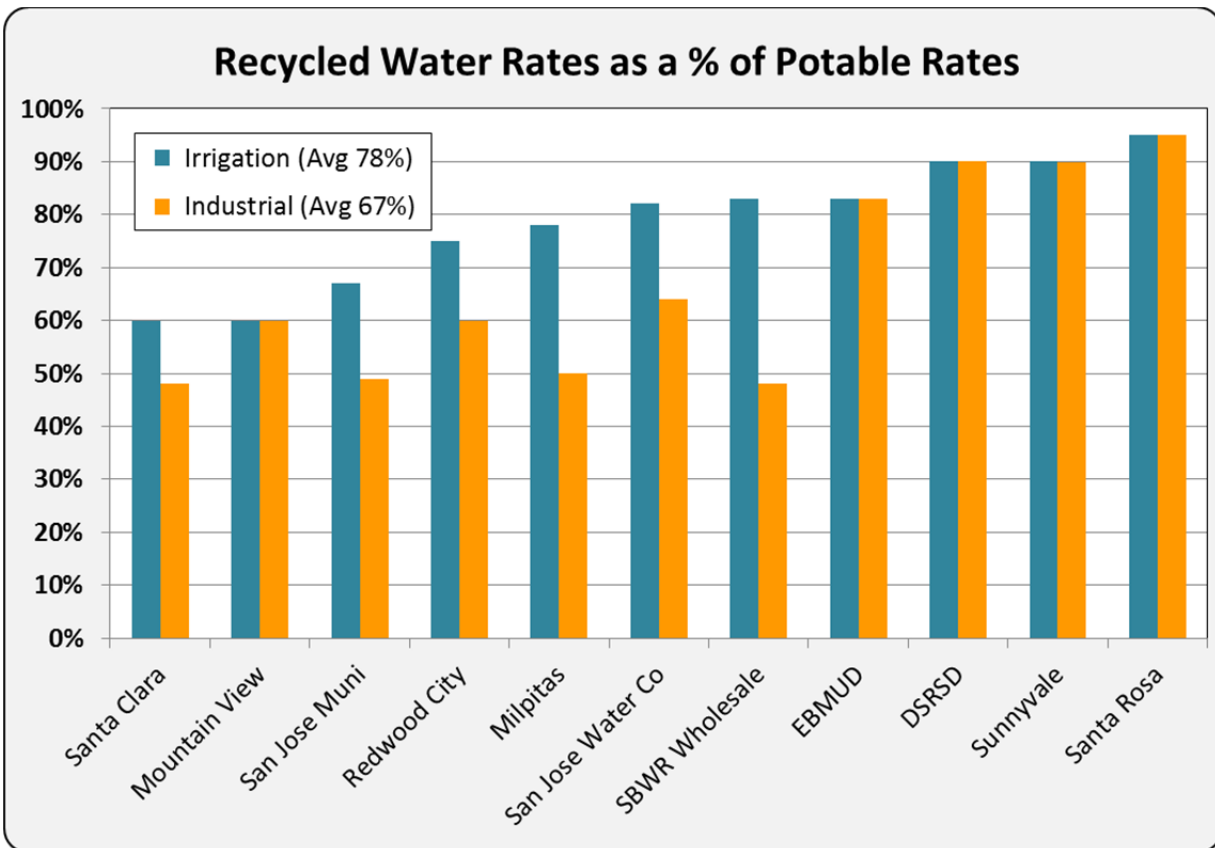
Recycled Water Beneficiaries

Recycled water provides benefits to all water customers. Recycled customers benefit from having a drought-proof water supply that is typically less expensive than potable water. Existing potable water customers benefit from improved potable supply reliability, particularly in times of drought or wholesale water shortages. Future potable water customers benefit from the increase in potable supply available to meet the water demands of growth and redevelopment. As such, costs for the recycled water system can be recovered from the various beneficiaries via a) recycled water rates, b) potable water rates, and c) water connection fees levied on new development.

Recycled water also provides ancillary benefit to the City’s wastewater enterprise via reduced effluent discharge into the San Francisco Bay. To the extent the City deems appropriate, recycled water system costs can be partially recovered from the City’s wastewater rates and/or wastewater connection fees.

Recycled Water Rate Survey

BWA conducted a survey of regional recycled water quantity charges. The following chart shows recycled water rates as a percentage of comparable potable water rates for the agencies surveyed. More detail is included on the attached rate survey table.



Basic rate survey observations include:

- All agencies surveyed offer recycled water at discounted rates compared to potable water charges. Recycled water rates generally ranged from roughly 45% to 95% of potable rates.
- The City of Sunnyvale's current recycled water rates are set at 90% of potable rates for both irrigation and industrial accounts. Compared to other agencies, Sunnyvale offers one of the smallest recycled water discounts on a percentage basis.
- A majority of agencies surveyed charged lower recycled water rates to industrial customers than to irrigation accounts, providing additional incentive for industrial customers to convert to recycled water use. In general, industrial accounts tend to require more incentives to induce a voluntary transition to recycled water use.
- For most agencies with different industrial and irrigation rates, a) industrial recycled water rates typically ranged from roughly 48% to 60% of potable rates, and b) irrigation recycled rates ranged from about 60% to 82% of potable rates. At the same time, a few agencies charged the same rates and/or provided the same percentage discount to both recycled industrial and irrigation accounts.
- Recycled industrial rates averaged roughly 67% of potable industrial rates, while recycled irrigation rates averaged roughly 78% of potable irrigation rates.
- The survey included one regional recycled water wholesaler, South Bay Water Recycling, whose recycled water rates are offered at a discount to the wholesale water rates of Santa Clara Valley Water District, a regional potable water wholesaler. Compared to the SCVWD rates, SBWR's recycled rates for industrial and irrigation uses are respectively 48% and 83% of the potable wholesale rate alternative.

Preliminary Recycled Water Pricing Recommendations

The City of Sunnyvale's recycled water rates are currently set at 90% of potable rates for both irrigation and industrial accounts. If the City desires to increase its recycled water customer base (without mandatory recycled use requirements), BWA recommends additional pricing incentives as follows:

- **Recycled Irrigation Rates: 75% - 90% of Potable Rates**
Additional discounts beyond the City's current 10% price reduction can provide additional financial incentive to induce more irrigation customers to transition to recycled water. This is particularly so for irrigation accounts that require the application of higher volumes of recycled water than potable water due to the elevated salinity levels in the City's current recycled water supply.
- **Recycled Industrial Rates: 50% - 75% of Potable Rates**
Industrial customers typically require increased incentives to voluntarily transition to recycled water. Furthermore, the elevated salinity of the City's recycled water requires industrial customers to purchase higher volumes of recycled water than potable water for use in industrial cooling towers. This increase in water use also results in higher

wastewater bills, which are based on the volume of metered water use. To account for both the general hurdles for industrial recycled water use as well as the additional financial impacts of the City's recycled water salinity issues, BWA recommends increased recycled water pricing incentives for industrial accounts.

- **Duration of Pricing Incentives**

To preserve future pricing flexibility, the City should not obligate itself to providing recycled water pricing discounts for perpetuity. For example, Redwood City's recycled water rate resolution only obligated the City to provide pricing discounts for a minimum of five years. Also, the City could opt to implement a higher discount for some time followed by a reduced discount (e.g. 40% discount for 5 years, then 25% discount thereafter). To date, the City has maintained the discounts for all recycled customers, regardless of when they originally connected.

Wholesale Recycled Water Rate Recommendations

In general, the City should price recycled water at highest rate at which a wholesale customer will purchase recycled water from the City. In all likelihood, the City will need to establish wholesale rates by negotiation with each customer, since each customer faces different financial and operational constraints for purchasing recycled water. Some general guidelines for wholesale pricing include:

- The City may need to charge different wholesale rates to different potential customers depending on various factors such as each customer's alternative cost of water, infrastructure funding requirements, and other considerations of both the City and the potential wholesale customer. For example, an agency with a severe water supply shortage facing costly supplemental supply alternatives would have a substantially higher "willingness to pay" than an agency with less-expensive potable water sources.
- At a minimum, wholesale recycled water rates should recover the marginal costs of providing service to the new customer, accounting for both incremental operating and capital costs. In some cases, the marginal cost may factor in avoided costs, such as costs related to wastewater discharge. Any additional net revenue recovery would provide a financial benefit to the City's existing customer base. Ideally, wholesale recycled water rates would include cost recovery for both recycled water operations as well as the City's investment in recycled water infrastructure.
- For any wholesale contracts, the City should consider including a take-or-pay minimum payment requirement to help ensure adequate cost recovery, regardless of the level of recycled water purchases, for any capital investments the City may need to fund.

Recycled Water Connection Fees

The City's water connection fees should also recover costs for recycled water system infrastructure since the system benefits future potable and recycled water customers. The City's wastewater connection fees can also include partial cost recovery if appropriate. *Note: The term "connection fees" refers to the one-time charges the City levies on new or expanded development to recover the cost of capacity in water and sewer infrastructure.*

- Existing potable customers transitioning to recycled water should not be required to pay any capacity fees for a transfer of demand.
- New or expanded potable connections should be required to pay connection fees that recover costs for all water system infrastructure including potable and recycled facilities.
- New recycled water connections should pay connection fees for recycled water infrastructure but should pay little or connection fees for potable water infrastructure. Some cost recovery for potable water system infrastructure is reasonable since the potable water system provides a back-up and emergency supply to recycled water customers.
- The City's sewer connection fee can include cost recovery for the estimated share of costs benefitting the City's wastewater system, if warranted.

Recycled Water System Is a Long-Term Investment

In the near-term, the City's recycled water system appears to provide limited benefit at significant cost. Due to the high cost of recycled water infrastructure coupled with relatively low levels of recycled water sales, revenues from recycled rates are expected to fall far short of recycled water system expenses in upcoming years.

Additionally, the City has a take-or-pay contract with the San Francisco Public Utilities Commission (SFPUC) requiring payment for a minimum purchase of wholesale water, regardless of actual demand. Historically the City has needed to purchase more than the minimum. However, declining levels of water demand in recent years have reduced SFPUC wholesale purchases close to the contractual minimum. If potable demand falls below the minimum, the take-or-pay contract poses a potential unintended cost on the transition to recycled water via the requirement to double pay both for recycled water supply as well as for unused potable water supply.

However, recycled water finances look more favorable over the longer run:

- The cost of recycled water infrastructure would typically be paid off within 20-30 years (if financed) while most of the infrastructure – such as recycled water distribution pipelines – will be operational for many more years.
- The cost of potable supply from both SFPUC and SCVWD has been increasing in recent history and is expected to rise substantially in upcoming years, resulting in an increasingly favorable comparative cost of recycled water supply.
- Recycled water can result in cost savings via avoided wholesale water rate increases and potential surcharges during periods of drought and water shortages.
- Recycled water can potentially result in avoided costs related to future wastewater permit requirements.
- Recycled water is a potential future supplemental revenue source if the City ever becomes a recycled water exporter.

Future Recycled Water Pricing

The City should periodically review its recycled water pricing policies in future years to ensure such policies continue to best achieve a balance of City objectives.

Recycled Water Rate Survey - December 2012

	Potable Charge per hcf	Recycled Charge per hcf	Recycled Rate % of Potable Rate
City of Sunnyvale Agriculture & Institutional Landscape Irrigation	\$2.09 \$4.38	\$1.88 \$3.95	90% 90%
City of Redwood City Existing Irrigation Accounts Tier 1: Up to 100% of water budget (most water sold in this tier) Tier 2: From 101% - 200% of water budget Tier 3: Over 200% of water budget New Irrigation Accounts Existing Industrial Accounts Tier 1: 0-15 hcf Tier 2: 16+ hcf	\$4.78 \$9.58 \$14.36 same as above \$3.72 \$6.08	\$3.59 \$3.59 \$3.59 \$4.78 for all use \$2.23 \$3.65	75% 37% (75% of Tier 1) 25% (75% of Tier 1) Varies 60% 60%
City of Santa Clara Irrigation Industrial Process <i>Industrial, Otherwise Served by Private Well</i> <i>Irrigation, Otherwise Served by Private Well</i>	\$3.17 \$3.17 \$3.17 \$3.17	\$1.89 \$1.53 \$0.72 \$1.18	60% 48% 23% 37%
City of Mountain View All Recycled Water Use	\$4.42	\$2.64	60%
City of Milpitas Irrigation Industrial	\$4.97 \$4.62	\$3.89 \$2.31	78% 50%
City of San Jose - Municipal Water Irrigation Industrial Agriculture <i>Industrial, Otherwise Served by Private Well</i> <i>Irrigation, Otherwise Served by Private Well</i>	\$2.74 \$2.74 \$2.74 \$2.74 \$2.74	\$1.82 \$1.33 \$1.29 \$1.18 \$1.00	67% 49% 47% 43% 36%
San Jose Water Company (Portions of San Jose, Cupertino Santa Clara, Los Gatos, Monte Serano, & Saratoga) Irrigation Industrial Agriculture	\$2.7160 \$2.7160 \$2.7160	\$2.2310 \$1.7259 \$1.7259	82% 64% 64%
East Bay Municipal Utility District All Recycled Water	\$3.17	\$2.64	83%
Dublin San Ramon Services District Irrigation	\$3.47	\$3.12	90%
City of Santa Rosa Commercial/Industrial Landscape Irrigation Tier 1: Up to 125% of water budget Tier 2: From 126 - 200% of water budget Tier 3: Over 200% of water budget	\$3.84 \$3.67 \$5.00 \$7.51	\$3.64 \$3.48 \$5.00 \$7.51	95% 95% 100% 100%
South Bay Water Recycling Wholesale Irrigation Wholesale Industrial <i>Recycled rates benchmarked to SCVWD Groundwater W-2 Rates.</i>	\$1.43 \$1.43	\$1.19 \$0.68	83% 48%