



WATER RECYCLING – AN IMPORTANT COMPONENT OF WISE WATER MANAGEMENT

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SUMMARY

San Mateo County's more than 720,000 residents are almost completely dependent on the Hetch Hetchy regional water system, a system vulnerable to drought and changing weather patterns. Facing an expanding population and a limited water supply, San Mateo County (County)¹ and its 20 cities and towns (Cities) must reduce their residents' dependence on imported water by diversifying their water supply sources. One way to diversify is through the increased use of recycled water.

Water recycling alone cannot completely mitigate the growing imbalance between water supply and demand, but used in conjunction with other water management options it can help the County and Cities maintain a safe and reliable water source.

Water recycling reduces regional dependence on imported water by providing a local, drought-resistant water source. It enhances water quality by reducing discharges to and diversions from ecologically sensitive water bodies. It is environmentally sustainable and has a smaller energy footprint than most other water supply sources.

The 2012-2013 San Mateo County Civil Grand Jury (Grand Jury) investigated recycled water use and found that only the cities of Daly City and Redwood City have implemented water recycling programs. The cities of Brisbane, Foster City, Pacifica, San Bruno, South San Francisco, and San Mateo have water recycling programs under consideration. The cities of Atherton, Belmont, Burlingame, Colma, Half Moon Bay, Hillsborough, Menlo Park, Millbrae, Portola Valley, San Carlos, and Woodside, plus the County, do not currently plan to develop water recycling programs. East Palo Alto did not respond to the Grand Jury's survey.

The Grand Jury recommends that Daly City and Redwood City study expansion of their programs into other non-potable uses of recycled water, as well as geographic expansion of their distribution system. The Grand Jury recommends the cities of Brisbane, Foster City, Pacifica, San Bruno, South San Francisco, and San Mateo finalize their feasibility studies and develop educational programs designed to highlight the need for recycled water, while addressing public health risk concerns. The Grand Jury recommends the remaining Cities and the County engage in active dialogue with water purveyors and wastewater treatment providers, as applicable, about the feasibility of developing programs for recycling water.

BACKGROUND

Population growth and climate change put at risk the reliability and sustainability of the water supply that many of us take for granted. Our region's imported water supplies, while still capable

¹ The term "County" in this report refers to the government of the County or the geographic area of the County, as appropriate to the context in which it is used.

of meeting demands during years of normal rainfall, are increasingly less reliable when rainfall is below normal. This problem will continue to worsen as more people and businesses move into the region thereby increasing the demand for water. The *San Francisco Bay Area Integrated Regional Water Management Plan*² highlights the growing imbalance between water supply and demand and provides a blueprint for improving the region's water supply reliability. The plan emphasizes a multi-faceted approach to addressing regional water problems and sets forth a core strategy of increasing the amount of water recycling in the region.

On February 3, 2009, the California State Water Resources Control Board (State Water Board) adopted a policy encouraging the use of recycled water. The State Water Board found that recycled water, when used in compliance with the policy, Title 22, Division 4, Chapter 3 of the California Code of Regulations (CCR), and all applicable state and federal water quality laws, is safe, and strongly supports its use.³

With regional and state support for recycled water, the Grand Jury sought to determine what efforts the County and Cities were undertaking to promote and develop programs for recycling water.

METHODOLOGY

The Grand Jury collected information about water recycling programs in the County via a survey sent to the County Public Works director and each of the Cities' managers. The Grand Jury conducted online research and interviewed representatives from Redwood City, the Bay Area Water Supply and Conservation Agency (BAWSCA), and the South Bayside System Authority. The Grand Jury also toured the South Bayside System Authority treatment facility, the Redwood City recycled water pump station, and a site in Redwood City using recycled water for irrigation.

DISCUSSION

The Need for Recycled Water

According to the City/County Association of Governments (CCAG) Energy Strategy 2012 document,⁴ the County and Cities' water supply systems may not be able to meet the challenges of population growth and climate change. The San Francisco Public Utilities Commission, operator of the Hetch Hetchy Aqueduct, estimates that the County and Cities will need an additional 5 million gallons of water per day by 2018 to meet projected demands. In order to meet this demand, the County and Cities will need to implement cost-effective and feasible water conservation and recycling programs.

² "San Francisco Bay Area Integrated Regional Water Management Plan," <http://bairwmp.org/plan/executive-summary> (Dec. 19, 2012).

³ California Recycled Water Policy, http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/ (Dec. 19, 2012).

⁴ "San Mateo County Energy Strategy 2012," <http://www.ccag.ca.gov/pdf/USTF/reports/Draft%20County%20Energy%20Strategy.pdf> (Dec. 19, 2012).

The County and Cities must diversify their water supply sources and reduce their residents' dependence on water from the Hetch Hetchy regional water system. Recycled water is one of the keys to reducing potable water use. Recycled water can augment water supplies, reduce the impacts and costs of wastewater disposal, and restore and improve sensitive natural environments. Water recycling would help the County and Cities realize the water conservation goals established in the California "20x2020 Water Conservation Plan," that requires urban water suppliers to reduce potable water use 20% by the year 2020.⁵

What is Recycled Water?

Recycled water is wastewater (sewage) treated to remove solids and certain other impurities, such as metals and ammonia, so the water can be used in landscape irrigation and industrial processes, or to recharge groundwater aquifers. The term "recycled water" is synonymous with "reclaimed water" or "reused water."

The Recycling Process

Sanitary sewer systems in the County (Appendix A) deliver wastewater to treatment plants where it progresses through varying degrees of treatment. The end use will dictate whether the wastewater receives primary, secondary, or tertiary treatment and disinfection. (Appendix B)

A dual piping network that keeps recycled water pipes completely separate from drinking water pipes distributes the recycled water to various end users.⁶ Effective June 1, 1993, all pipes designed to carry recycled water must be purple, or wrapped in distinctive purple tape and labeled as recycled water.⁷

Historical Use of Recycled Water

Water recycling has been a part of California's water management plan for more than 100 years.

In the early 1900s, partially treated wastewater and groundwater transformed San Francisco's Golden Gate Park from an area of sand and waste to a garden spot. In the 1930s, construction began on the McQueen Treatment Plant in Golden Gate Park to provide secondary-treated recycled water for park irrigation. This practice continued until 1978 when the McQueen plant stopped operating because it did not meet the new state standards for irrigation use.⁸

⁵ California State Water Resources Control Board - 20x2020 Agency Team on Water Conservation, http://www.swrcb.ca.gov/water_issues/hot_topics/20x2020/index.shtml (Dec. 19, 2012).

⁶ Wikipedia - Reclaimed Water, http://en.wikipedia.org/wiki/Reclaimed_water (Dec. 19, 2012).

⁷ "California Health Laws Related to Recycled Water", <http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Recharge/Purplebookupdate6-01.PDF> (Dec. 19, 2012).

⁸ San Francisco Water - Recycled Water, <http://www.sfwater.org/index.aspx?page=141> (Dec. 19, 2012).

In 1929, Los Angeles County began using recycled water for landscape irrigation in parks and golf courses.⁹

In 1967, the Irvine Ranch Water District (IRWD) began recycling water at its Michelson Water Reclamation Plant. In 1991, IRWD became the first in the nation to obtain health department permits for the interior use of recycled water for flushing toilets and other non-potable uses.¹⁰

Current Use of Recycled Water

Californians use recycled water for a variety of purposes including irrigation, toilet flushing, construction, water features, dust control, cooling and air conditioning, soil compaction, commercial laundry, car washing, fire sprinkler systems, and sewer and street cleaning. (Appendix C) ***Recycled water must not be used for drinking, bathing, or swimming pools!***

In addition to commercial customers, residential customers are increasingly using recycled water. In southern California, virtually all new residential development serviced by the IRWD are required to use recycled water for landscape irrigation. In northern California, Vintage Greens in Windsor is equipped with dual piping that enables homeowners to use recycled water outside and potable water indoors.¹¹

At sites using recycled water for irrigation, signs are displayed warning people not to drink from the irrigation system.



Some local governments, such as Los Angeles and Orange County, are using recycled water for indirect, potable groundwater supply augmentation. The recycled water is pumped into groundwater aquifers, is pumped out, treated again, and then finally used as drinking water. The term for this process is “groundwater recharging.”¹²

⁹ http://en.wikipedia.org/wiki/Reclaimed_water

¹⁰ Ibid.

¹¹ “Recycled Water: Safe, Successful Use in Hundreds of Cities in California and Throughout America,” A Summary Report prepared by the Redwood City Public Works Department, <http://www.datainstincts.com/images/pdf/cacities.pdf> (Dec. 19, 2012).

¹² http://en.wikipedia.org/wiki/Reclaimed_water

Benefits of Recycled Water

Water recycling reduces regional dependence on imported water by providing a local, drought-resistant water source. It enhances water quality by reducing discharges to and diversions from ecologically sensitive water bodies. It is environmentally sustainable and has a smaller energy footprint than most other water supply sources. Recycled water requires about one-eighth the energy required for seawater desalination, less than one-half the energy used by the San Francisco regional water system to bring water to the Bay Area, and one-half to three-quarters the energy required to pump groundwater.¹³

The Importance of Educating the Public about Recycled Water

The public is more likely to support the use of recycled water when it understands its role in water management objectives. Education must focus on the environmental and economic benefits of recycled water, while addressing public health risk concerns.

Redwood City has a comprehensive program for educating the public about recycled water. The City uses printed materials and engages in public outreach activities in order to increase the public's understanding and acceptance of recycled water. Redwood City also requires that all recycled water site supervisors attend a Site Supervisor Certification Workshop.

Safety Concerns about Recycled Water

When used properly and for its intended use, recycled water is safe. A 2005 study titled, "Irrigation of Parks, Playgrounds, and Schoolyards with Reclaimed Water," found that there had been no incidences of illness or disease from either microbial pathogens or chemicals, and the risks of using recycled water for irrigation were not measurably different from irrigation using potable water. Studies by the National Academies of Science and the Monterey Regional Water Pollution Control Agency, have found recycled water to be safe for agricultural use.¹⁴

State law regulates the production and use of recycled water. Title 22, Division 4, Chapter 3 of the CCR establishes water quality and public health requirements for recycled water. The California Department of Public Health is responsible for establishing these requirements and regional water quality control boards are responsible for their enforcement. In addition, Title 17, Division 1, Chapter 5 of the CCR establishes requirements to prevent cross connections between recycled water systems and drinking water systems. State and local health departments enforce these regulations.¹⁵

¹³ "Importance of Recycled Water to the San Francisco Bay Area" - Bay Area Recycled Water Coalition <http://www.barwc.org/files/LinkClick.pdf> (Dec. 19, 2012).

¹⁴ http://en.wikipedia.org/wiki/Reclaimed_water

¹⁵ California Department of Public Health Regulations Related to Recycled Water - January 2009, <http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Lawbook/RWregulations-01-2009.pdf> (Dec. 19, 2012).

Cost Concerns about Recycled Water

Most recycled water projects are cost competitive with other water management options when the full range of benefits is considered. For example, the State Recycled Water Task Force, which convened in 2001, estimated that the cost of a recycled water program averaged about \$1,025 per acre-foot (325,853 gallons). The Task Force noted this cost was comparable to costs of other water supply options, including new dams, reservoirs, and desalination. The Task Force's average unit cost estimate is very close to the average unit cost of 26 Bay Area recycled water projects evaluated in 2005. Collectively, the Bay Area projects had an average unit cost between \$1,000 and \$1,200 per acre-foot.¹⁶

People often use unequal comparisons when evaluating the relative cost of recycled water. For example, the cost of recycled water at the customer's *location* gets compared to the cost of other water supplies at their *source*, without taking into account the transmission, treatment, and distribution costs associated with moving water from its source to the customer's location. Cost comparisons with other supply options commonly ignore differences in delivery reliability and do not account for the cost of wastewater disposal and environmental impact.¹⁷

Federal, state, and local funding is available to help offset the cost of designing, constructing, and operating water recycling systems. Federal funding is available through the U.S. Bureau of Reclamation under Title XVI of the 1992 Reclamation Wastewater and Groundwater Study & Facilities Act (PL 102-575).¹⁸ State grants are available from a variety of sources including the State Water Board and the California Department of Water Resources.¹⁹ Local funding can include municipal debt repaid through utility rate increases, impact fees, or special assessments.

Cost of Recycled Water to the End User

To encourage the use of recycled water, end users often receive a discount on their water utility bills.²⁰ Redwood City, for example, uses the following recycled water pricing policy:

- **For existing irrigation meters/accounts that connect to recycled water:** Twenty five percent discount on monthly water utility bills beginning with the first billing period following connection to the Recycled Water Project. Discount shall apply to prevailing drinking water rates and charges in effect at the time of physical connection. The City will perform and pay for customer site retrofits related to landscape irrigation.
- **For existing industrial meters/accounts that connect to recycled water:** Forty percent discount on monthly water utility bills beginning with the first billing period following

¹⁶ <http://www.barwc.org/files/LinkClick.pdf>

¹⁷ Ibid.

¹⁸ US Department of the Interior/Bureau of Reclamation – Title XVI (Water Reclamation and Reuse) Program, <http://www.usbr.gov/lc/socal/titlhexvi.html> (Dec. 19, 2012).

¹⁹ California State Water Resources Control Board – Water Recycling Funding Program, http://www.waterboards.ca.gov/water_issues/programs/grants_loans/water_recycling/ (Dec. 19, 2012).

²⁰ http://en.wikipedia.org/wiki/Reclaimed_water

connection to the Recycled Water Project. Discount shall apply to prevailing drinking water rates and charges in effect at the time of physical connection. Customers will pay for and perform all facilities retrofits for industrial uses.

The North San Mateo County Sanitation District, a subsidiary district of the City of Daly City, also charges its customers using recycled water less than it charges customers using potable water.

The Need for Regional Collaboration

The growing imbalance between water supply and demand is a statewide problem, not just a problem in the County. Nevertheless, local water recycling projects are necessary to develop the infrastructure and public acceptance for a regional program.

While there is tremendous opportunity for recycled water in the County, there are numerous regional challenges that need to be addressed in order for local governments to realize the potential benefits of recycled water. These challenges include securing federal and state participation in regional projects, coordinating local water plans and projects for regional benefits, resolving jurisdictional constraints, improving public understanding of recycled water, and addressing health risk misconceptions.²¹

BAWSCA is one agency that helps to coordinate local water plans and projects. BAWSCA represents the interests of 24 cities and water districts and 2 private utilities in Alameda, Santa Clara, and San Mateo counties that purchase water wholesale from the San Francisco regional water system.²² BAWSCA has initiated work on a long-term reliable water supply plan. This plan will quantify the projected water supply needs of its member agencies through year 2035 and identify water supply management projects that meet those needs. BAWSCA has also been helpful in coordinating the inclusion of local water recycling projects in regional packages submitted for state grant funding.

²¹ <http://www.barwc.org/files/LinkClick.pdf>

²² Bay Area Water Supply and Conservation Agency, <http://bawasca.org/about/> (Dec. 19, 2012).

Summary of Recycled Water Survey Responses

Existing Recycled Water Programs	
Daly City/ North San Mateo County Sanitation District	<p>The North San Mateo County Sanitation District, a subsidiary district of Daly City, began delivering recycled water to commercial customers in August 2004. The distribution system consists of 4.85 miles of distribution pipeline, 2 pump stations, and 1.4 million gallons of storage. The geographic area served is Northern San Mateo County and the Southwest portion of the City/County of San Francisco through contractual agreements with its golf clubs. This represents 4.2% of the Sanitation District's geographic area. At maximum production, 41% of the Sanitation District's sewage effluent becomes recycled water. Median landscape and playing field irrigation, sewer main flushing, and turf irrigation at the Olympic, San Francisco, Lake Merced, and Harding Park Golf Clubs are the primary uses for the recycled water. Actual usage billed in hundred cubic feet units (748 gallons) determines the charges for recycled water. There are plans to conduct supplementary tests in the winter/spring 2012-2013 to determine if Colma cemeteries, Park Merced, and San Francisco State University can receive recycled water.</p>
Redwood City	<p>In 2002, Redwood City began planning for the development of a citywide recycled water system to address the very real possibility of severe water shortages in the coming years. The city had been exceeding its Hetch Hetchy water allotment and was searching for a way to use less water. In 2003, the City formed a Community Task Force on Recycled Water to build community support for the project. Initial opposition to the project centered on the safety of children at playgrounds and parks. Physical construction of the recycled water project began in 2005. Phase I of the project became operational in 2010. The distribution system consists of 15+ miles of distribution pipeline, 1 pump station, and 4.36 million gallons of storage. The geographic area served includes Redwood Shores and Seaport. This represents 50% of the geographic area of Redwood City. Currently, Redwood City uses 6% of its sewage effluent as</p>

	recycled water. In 2011, the city saved 169 million gallons of potable water. Redwood City uses recycled water for commercial and residential irrigation, dust control, water features, car washing, and sewer lift station cleaning. Actual usage by metering determines the charges for recycled water. Phase II of the Recycled Water Project calls for expansion into the area west of US 101. In the future, Redwood City can deliver recycled water to adjacent cities.
Recycled Water Projects under Consideration	
Brisbane	Brisbane has a proposed recycled water project under environmental review. The project known as “Brisbane Baylands” is approximately one square mile of underdeveloped brownfield southwest of Candlestick Park on the west side of US 101. Irrigation and toilet flushing within commercial buildings will be the primary uses of the recycled water.
Foster City	Foster City, the Estero Municipal Improvement District, and the City of San Mateo are preparing a Wastewater Treatment Plant Master Plan that will explore the feasibility of producing recycled water. The expected completion date is May 2013.
Pacifica	Pacifica, through a contract with the North Coast County Water District, plans to deliver recycled water for irrigation to Sharp Park Golf Course, Fairway Ballpark, Oceana High School and Ingrid B. Lacy Middle School fields, and the Beach Boulevard Promenade in the Spring of 2013. This represents 10% of its geographic jurisdiction. The recycled water system includes one pump station, three miles of distribution pipeline, and a 400,000-gallon tank. Pacifica anticipates potable water savings of 50 million gallons each year. Recycled water rates will be less than potable water rates.
San Bruno and South San Francisco	San Bruno owns and operates a Water Quality Control plant jointly with South San Francisco. In 2009, a Recycled Water Feasibility Study was completed. A program for recycling water could be operational in the year 2020. The proposed facilities would include approximately four miles of distribution pipe, a 1.4 million gallon per day tertiary treatment system, and two storage tanks. Landscape irrigation at parks and schools in the service area, including the Golden Gate

	National Cemetery and Commodore Park in San Bruno, will be the primary uses for the recycled water.
City of San Mateo	The City of San Mateo is performing a market analysis to identify demand for recycled water. The city plans to serve low-lying areas, encompassing 30-50% of the city's geographic area. Irrigation would be the main use of recycled water.
Cities/Towns Not Planning on Developing Recycled Water Programs	
Atherton	Atherton stated that CalWater handles its water issues. ²³ The West Bay Sanitary District collects Atherton's sewage and the South Bayside System Authority treats it.
Belmont	Belmont is not involved in water distribution or wastewater treatment and does not have the infrastructure to undertake such function. The South Bayside System Authority treats its wastewater.
Burlingame	Burlingame uses a small amount of recycled water at the wastewater treatment plant for washing down equipment, but has no plans to develop a program for distributing recycled water.
Colma	Colma does not have a sewer treatment plant, nor is it a water purveyor. Therefore, the revenue source to fund a capital improvement, such as the infrastructure for a recycled water system, becomes very unlikely. Colma would be interested in recycled water for irrigation purposes. The North San Mateo County Sanitation District, a subsidiary district of Daly City, plans to conduct supplementary tests in the winter/spring 2012-2013 to determine if Colma cemeteries can receive recycled water.
Half Moon Bay	The Sewer-Authority Mid-Coastside or the Coastside County Water District is the agency that would implement a program for recycling water. These agencies are responsible for wastewater treatment and water distribution respectively within the city limits of Half Moon Bay.
Hillsborough	Hillsborough does not plan to recycle water. The adjacent cities of Burlingame and San Mateo treat Hillsborough's sewage.

²³ The Grand Jury has limited legal authority to investigate private utility companies such as CalWater.

Menlo Park	Menlo Park did not cite a reason for not developing a program.
Millbrae	Millbrae, from 1988 to 2009, used recycled water for landscaping at the US 101/Millbrae Avenue interchange. The practice stopped in 2009 due to renovations at the city's wastewater treatment plant. The city has one pump station and less than one mile of distribution pipe. The city currently has no plans to expand the distribution system stating that it would be cost prohibitive to do so.
Portola Valley	CalWater provides Portola Valley's water service and the West Bay Sanitary District provides its wastewater service. Neither of these utilities have plans to construct a recycled water system to serve Portola Valley.
San Carlos	San Carlos cited the distance to the treatment facility and overall cost as reasons for not pursuing a recycled water program.
Woodside	Woodside did not cite a reason for not developing a program.
County of San Mateo	Recycled water programs usually exist at large-scale wastewater treatment facilities. The County does not operate any large-scale wastewater treatment facilities.

Survey Non-Responders

East Palo Alto did not respond to the Grand Jury's survey on Recycled Water.

FINDINGS

- F1. There is a growing imbalance in the County and the region between water supply and demand.
- F2. The County and Cities must reduce their residents' dependence on imported water by diversifying their water supply sources.
- F3. Water recycling alone cannot completely mitigate the growing imbalance between water supply and demand, but used in conjunction with other water management options it can help the County and Cities maintain a safe and reliable water source.
- F4. Properly produced and used, recycled water poses little or no public health risk.
- F5. Educational programs are necessary to highlight the growing importance of recycled water in the County and the region.
- F6. The County and Cities would benefit from collaborative arrangements to jointly produce and distribute recycled water where appropriate.

RECOMMENDATIONS

The 2012-2013 San Mateo County Civil Grand Jury recommends that, the *City Councils of Daly City and Redwood City* do the following, on or before June 30, 2014:

- R1. Study expansion of their programs into other non-potable uses of recycled water.
- R2. Study geographic expansion of their recycled water distribution systems.

The Grand Jury recommends that the *City Councils of Brisbane, Foster City, Pacifica, San Bruno, South San Francisco, and San Mateo* do the following, on or before June 30, 2014:

- R3. Finalize current feasibility studies.
- R4. Actively pursue partnerships for producing and distributing recycled water.
- R5. Develop educational programs designed to highlight the need for recycled water, while addressing public health risk concerns.

The Grand Jury recommends that the *County Board of Supervisors and the City/Town Councils of Atherton, Belmont, Burlingame, Colma, East Palo Alto, Half Moon Bay, Hillsborough, Menlo Park, Millbrae, Portola Valley, San Carlos, and Woodside* do the following, on or before June 30, 2015:

- R6. Engage in active dialogue with water purveyors and wastewater treatment providers, as applicable, about the feasibility of developing a program for producing and distributing recycled water.
- R7. Conduct any studies that may be required to develop a program for recycling water.

REQUEST FOR RESPONSES

Pursuant to Penal code section 933.05, the Grand Jury requests the following to respond to the foregoing Findings and Recommendations referring in each instance to the number thereof:

- County Board of Supervisors
- Each City/Town Council in the County

The governing bodies indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda, and open meeting requirements of the Brown Act.

Reports issued by the Civil Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Civil Grand Jury.

APPENDIX A

Sewage Collection Systems within Each Treatment Plant Service Area in the County

Treatment Plant Operator	Collection System Operator **	Serves Unincorporated Area	County District *
North San Mateo County Sanitation District	City of Daly City Town of Colma Westborough County Water District	X	
City of Pacifica	City of Pacifica		
Sewer Authority Mid-Coast	City of Half Moon Bay Montara Sanitary District Granada Sanitary District	X X	
City of San Francisco-Southeast Treatment Plant	City of Brisbane Bayshore Sanitary District Guadalupe Valley Municipal Improvement District	X	
South San Francisco-San Bruno	City of South San Francisco City of San Bruno	X	
Airports Commission, City and County of San Francisco	San Francisco International Airport	X	
City of Millbrae	City of Millbrae		
City of Burlingame	City of Burlingame Burlingame Hills Sewer Maintenance District Town of Hillsborough (part)	X	X
City of San Mateo-Estero Municipal Improvement District	Town of Hillsborough (part) City of San Mateo Crystal Springs County Sanitation District Estero Municipal Improvement District	X	X

Treatment Plant Operator	Collection System Operator **	Serves Unincorporated Area	County District *
South Bayside System Authority	City of Belmont		
	City of San Carlos		
	Harbor Industrial Sewer Maintenance District	X	X
	Scenic Heights County Sanitation District	X	X
	Devonshire County Sanitation District	X	X
	City of Redwood City		
	Edgewood Sewer Maintenance District	X	X
	Emerald Lake Heights Sewer Maintenance District	X	X
	Fair Oaks Sewer Maintenance District	X	X
	Kensington Square Sewer Maintenance District	X	X
	Oak Knoll Sewer Maintenance District	X	X
	West Bay Sanitary District	X	
City of Palo Alto	East Palo Alto Sanitary District		

Source: San Mateo County Planning Division

* The County Public Works Department provides sewer collection services for residents and businesses in the ten sewer maintenance and sanitation districts within the County.

The County does not operate sewage treatment facilities.

** Sewage from all districts flows through the downstream agency's pipes to the wastewater treatment plant. All districts have agreements with the downstream agencies to pay for the use of their pipes and treatment.

APPENDIX B

RECYCLED WATER USES* ALLOWED IN CALIFORNIA

This summary is prepared by WaterReuse Association of California, from the December 2, 2000, Title 22 adopted Water Recycling Criteria, and supersedes all earlier versions.

Recycled Water Use	Treatment Level			
	Disinfected Tertiary Recycled Water	Disinfected Secondary 2.2 Recycled Water	Disinfected Secondary 2.3 Recycled Water	Undisinfected Secondary Recycled Water
Other Uses:				
Groundwater Recharge	ALLOWED under special case-by-case permits by RWQCB ⁴			
Flushing toilets and urinals	ALLOWED	NOT ALLOWED	NOT ALLOWED	NOT ALLOWED
Priming drain traps	ALLOWED	NOT ALLOWED	NOT ALLOWED	NOT ALLOWED
Industrial process water that may contact workers	ALLOWED	NOT ALLOWED	NOT ALLOWED	NOT ALLOWED
Structural fire fighting	ALLOWED	NOT ALLOWED	NOT ALLOWED	NOT ALLOWED
Decorative fountains	ALLOWED	NOT ALLOWED	NOT ALLOWED	NOT ALLOWED
Commercial laundries	ALLOWED	NOT ALLOWED	NOT ALLOWED	NOT ALLOWED
Consolidation of backfill material around potable water pipelines	ALLOWED	NOT ALLOWED	NOT ALLOWED	NOT ALLOWED
Artificial snow making for commercial outdoor use	ALLOWED	NOT ALLOWED	NOT ALLOWED	NOT ALLOWED
Commercial car washes, not heating the water, excluding the general public from the washing process	ALLOWED	NOT ALLOWED	NOT ALLOWED	NOT ALLOWED
Industrial process water that will not come into contact with workers	ALLOWED	ALLOWED	ALLOWED	NOT ALLOWED
Industrial boiler feed	ALLOWED	ALLOWED	ALLOWED	NOT ALLOWED
Nonstructural fire fighting	ALLOWED	ALLOWED	ALLOWED	NOT ALLOWED
Backfill consolidation around nonpotable piping	ALLOWED	ALLOWED	ALLOWED	NOT ALLOWED
Soil compaction	ALLOWED	ALLOWED	ALLOWED	NOT ALLOWED
Mixing concrete	ALLOWED	ALLOWED	ALLOWED	NOT ALLOWED
Dust control on roads and streets	ALLOWED	ALLOWED	ALLOWED	NOT ALLOWED
Cleaning roads, sidewalks and outdoor work areas	ALLOWED	ALLOWED	ALLOWED	NOT ALLOWED
Flushing sanitary sewers	ALLOWED	ALLOWED	ALLOWED	ALLOWED

* Refer to the full text of the December 2, 2000 version Title 22, California Water Recycling Criteria. This chart is only an informal summary of the uses allowed in this version. Adapted for use in Site Supervisor Training Workshops by South Bay Water Recycling, San Jose, California, October 29, 2002, Jerry Brown, Workshop Coordinator. The complete and final 12/02/2000 version of the adopted criteria can be downloaded from:

http://dhs.ca.gov/ps/dwrnm/publications/regulations/recycleregs_index.htm

² With "Conventional tertiary treatment". Additional monitoring for two years or more is necessary with direct filtration.

³ Drift eliminators and/or biocides are required if public or employees can be exposed to mist.

⁴ Refer to Groundwater Recharge Guidelines, available from the California Department of Health Services.

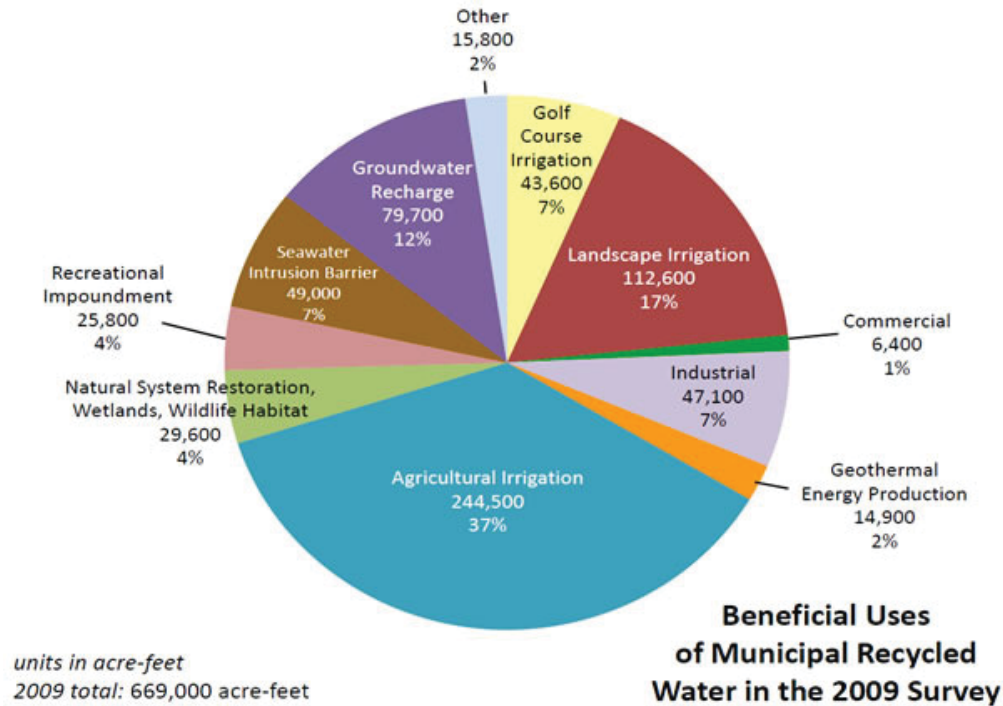
WaterReuse Association of California • (916) 442-2746 • www.watereuse.org/h2o

Frequently Asked Questions • 6

APPENDIX C

2009 Municipal Wastewater Survey Results

(Conducted by the State Water Resources Control Board and the Department of Water Resources)



An acre-foot is the amount of water needed to cover one acre to a depth of one foot. It is equivalent to 325,853 gallons

Golf Course Irrigation = Public and private courses

Landscape Irrigation = Non-golf course related landscape irrigation, including buildings, highways, schools, and parks

Commercial = Business use, such as laundries and office buildings

Industrial = Manufacturing facilities, cooling towers

Geothermal Energy Production = Augmentation of geothermal fields

Agricultural Irrigation = Pasture or crop irrigation

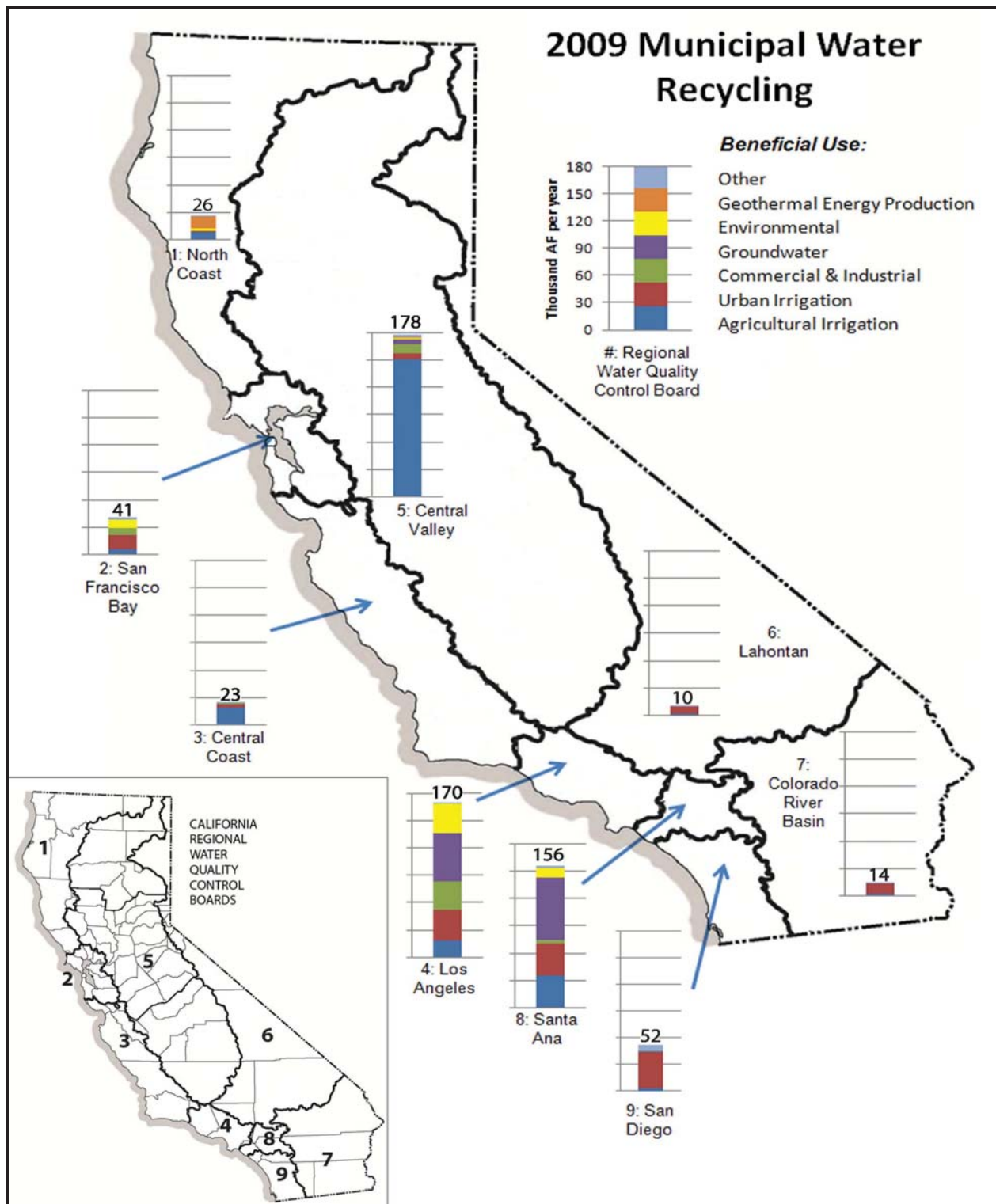
Natural System Restoration, Wetlands, Wildlife Habitat = Addition to wetlands

Recreational Impoundment = Addition to recreational lakes

Seawater Intrusion Barrier = Groundwater injection to prevent or reduce seawater intrusion

Groundwater Recharge = Recharge basins to augment depleted groundwater aquifers

Other = Construction Use, dust control, or unknown



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