



Untapped Potential: Water Reuse for California's Future Water Supply Reliability

City of San Diego's Remarks provided to the Assembly Water, Parks and Wildlife Committee's Oversight Hearing

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Deputy Director
March 20, 2012



City of San Diego



- Population: 1.3 million
- Service area: 404 square miles
- 8th largest city in the U.S.



California Water Projects



Federal Water Projects

- Central Valley Project
- Coachella Canal
- All American Canal

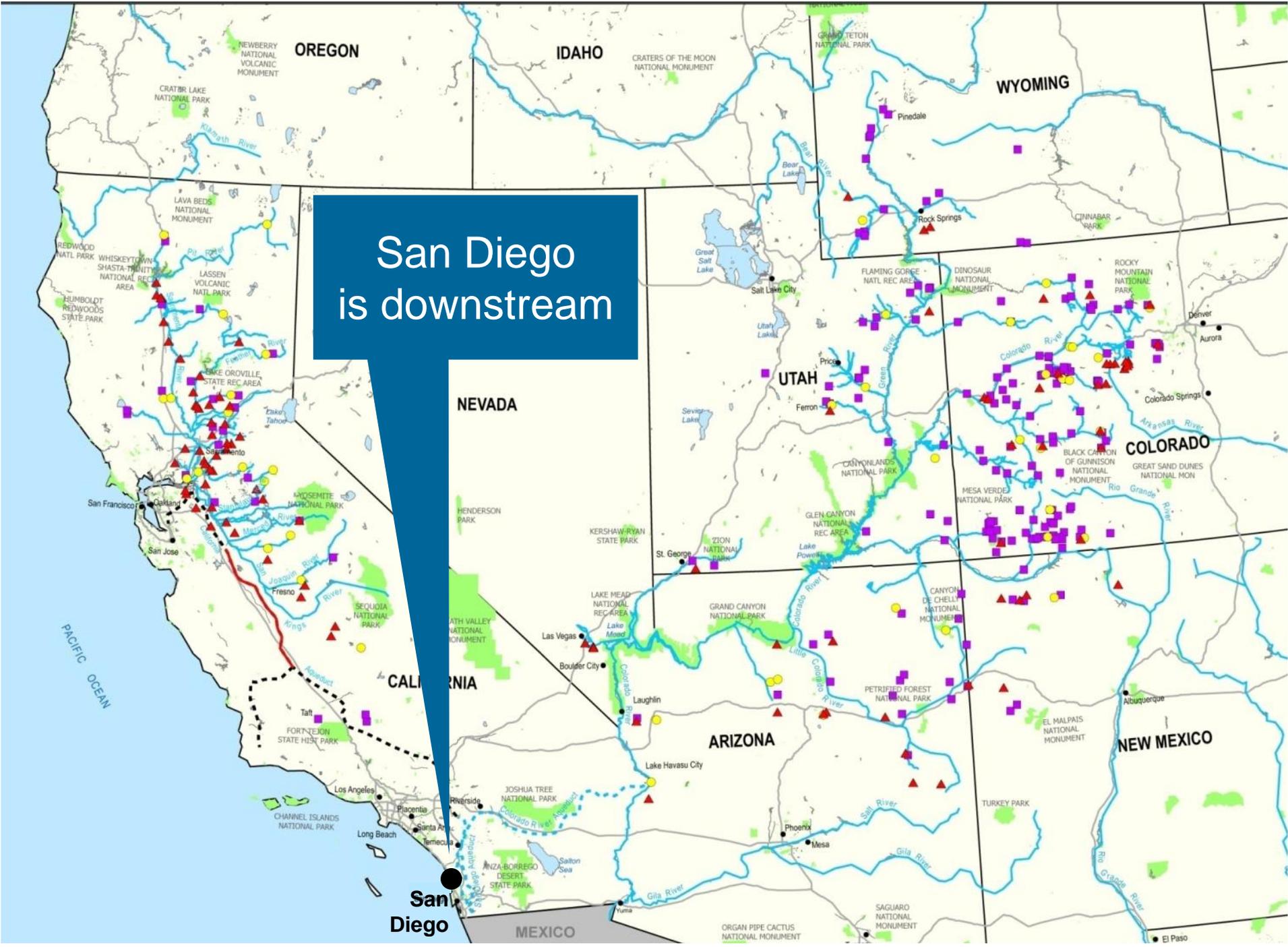
State Water Projects

Local Water Projects

- Mokelumne Aqueduct
- Hetch Hetchy Aqueduct
- Los Angeles Aqueduct
- Colorado River Aqueduct

Bay-Delta

San Diego is downstream



Our Water Supply Challenges

- Limited local supplies
- Increasing cost of imported water
- Pumping restrictions
- Recurring drought conditions
- Natural disasters

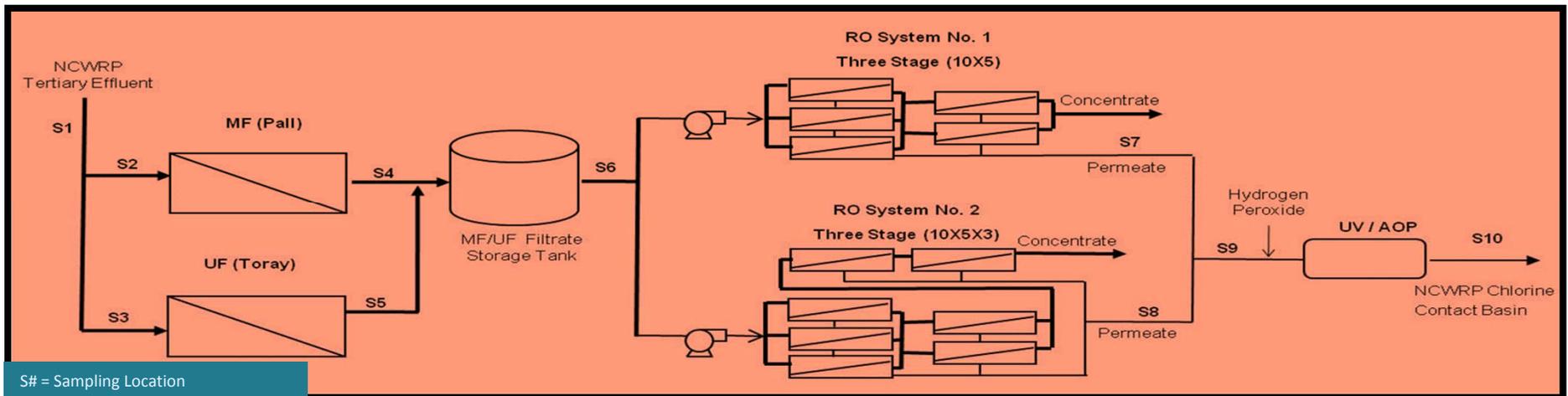


San Diego's Water Reuse Program

- 2004 ➤ City Council directs City Manager to conduct a study to evaluate options to increase the use of recycled water.
- 2006 ➤ Water Reuse Study identified six potential options to maximize the use of the City's existing recycled water.
- 2007 ➤ City Council voted to proceed with a Demonstration Project to determine the feasibility of utilizing highly purified tertiary water to augment raw water supply.



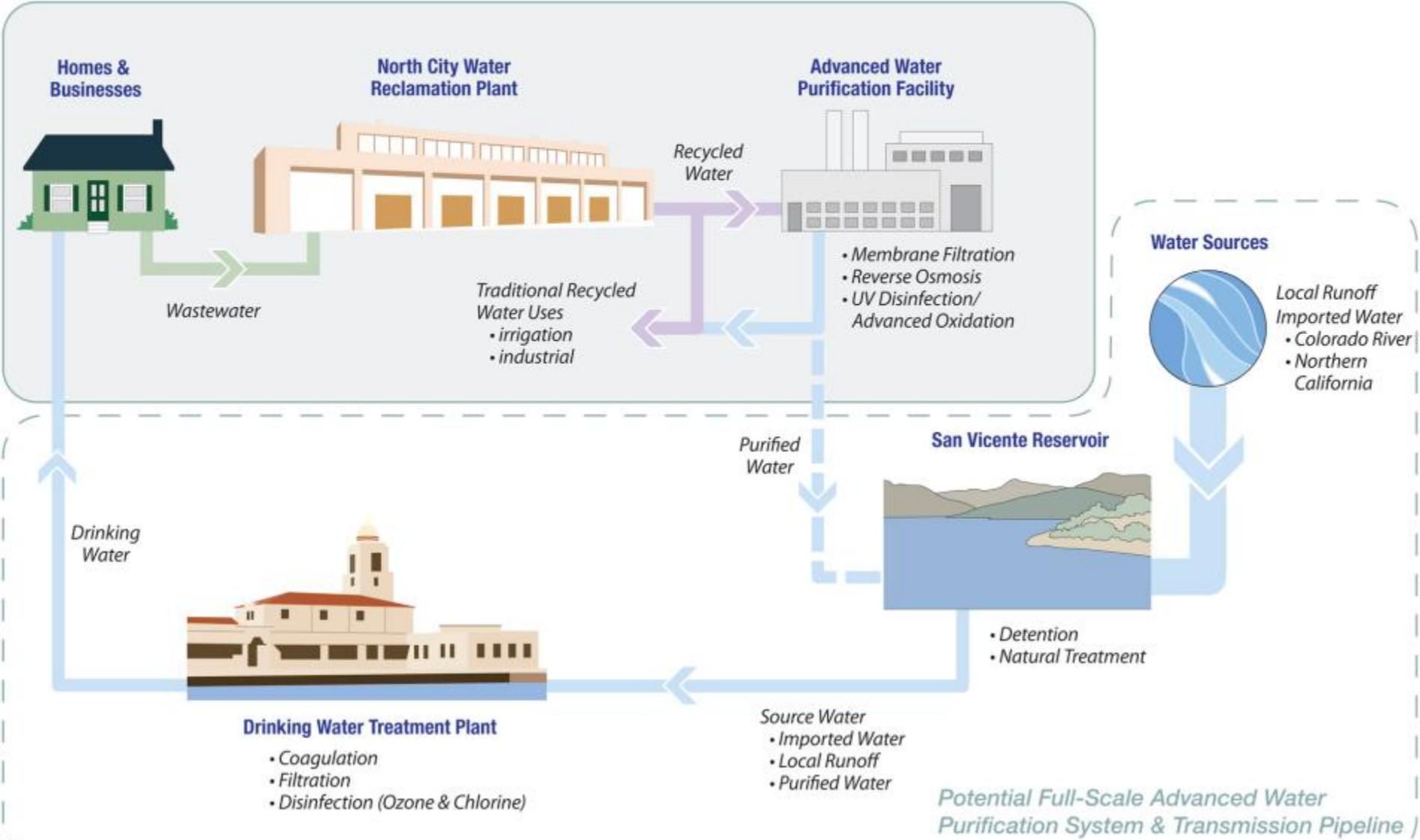
Advanced Water Purification Facility



City of San Diego's Water Purification Demonstration Project

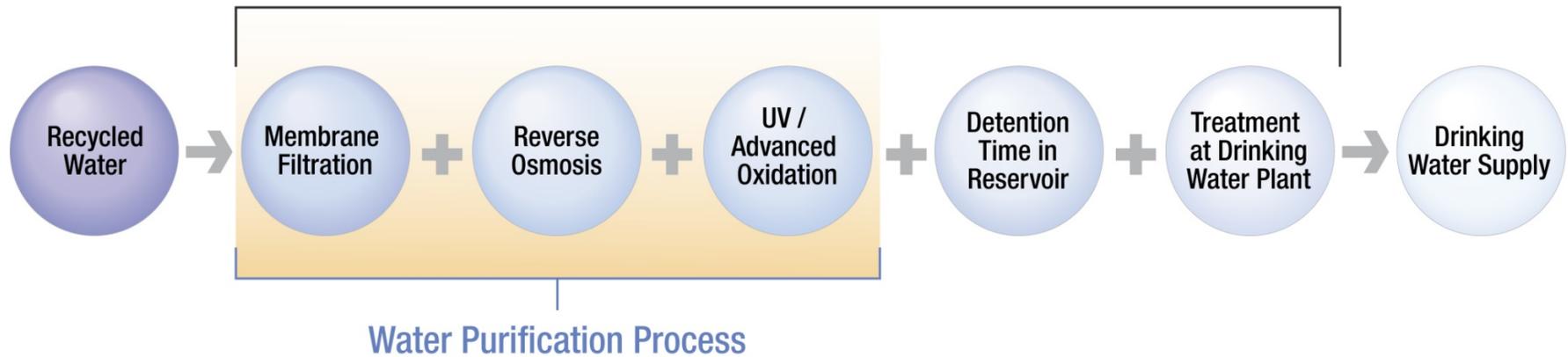
Purification Process

Demonstration-Scale Project



Water Purification Process

Multi-Barrier Water Purification Steps



Microfiltration & Ultrafiltration



Reverse Osmosis



Ultraviolet Light /
Hydrogen Peroxide



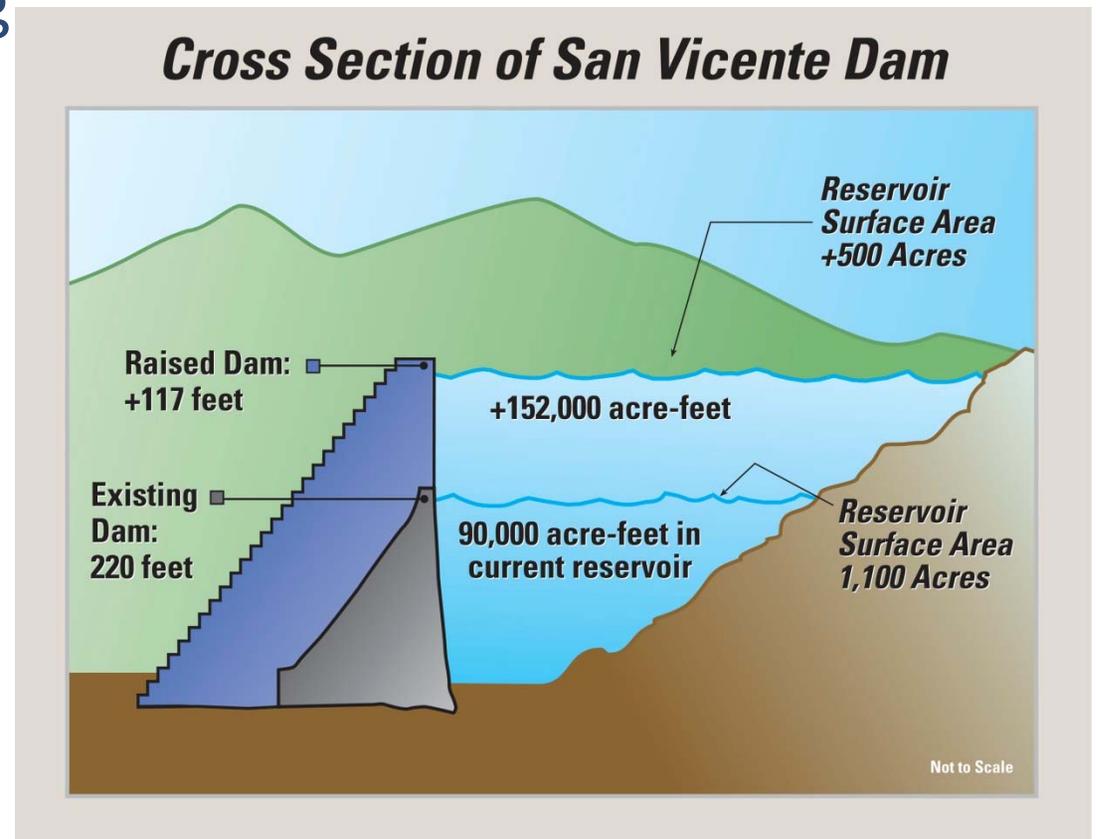
Independent Advisory Panel

- Review challenging issues facing water and wastewater communities
- Provide independent, technical, and scientific review
- Well-known reputation as a credible, third-party, research-oriented organization



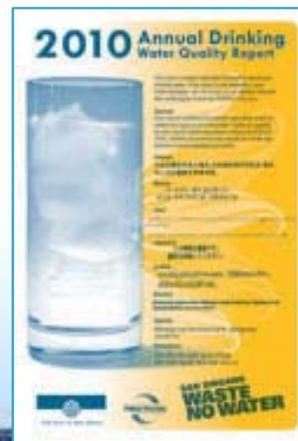
Regulatory Framework -

- Series of workshops
- Submitted treatment testing and monitoring plan
- Demonstration testing
- Reservoir modeling



First Quarter Results - Overview

- Exceptional overall water quality, met all project treatment goals
- Purified water met all drinking water standards
- Equipment at each step in the treatment process is performing properly



Coalition of Support



Friends of Infrastructure



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD



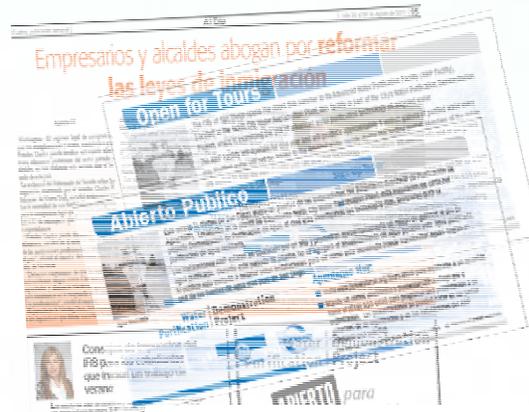
Materials & Tools

- Fact sheets
- FAQ
- Info card
- Newsletter
- E-update
- Social Media
- QR Code
- Website
- Premiums



Public Tours

- Presentation
- Walking tour
- Water comparisons
- Active dialogue
- Useful feedback
- Print advertisements
- Water bill inserts



Media Results

Strategy

- Template article submissions
- Event calendars
- Editorial briefings
- Media consultant



As 'Yuck Factor' Subsidies, Treated Wastewater Flows From Taps

By ELIZABETH BARBERER
 SAN DIEGO — Almost hidden in the southern hills, the pilot water treatment plant here does not seem a harbinger of revolution. It cost \$15 million, uses long-established technology and produces a million gallons a day. But the plant's water is not the usual drinking water from wastewater. With the extra factor being people from around the world who are not used to drinking recycled water, it is a much smaller plant, with only 17 pipes, 100,000 gallons a day, and a staff of 10. It is the only plant of its kind in the world. It is the only plant of its kind in the world. It is the only plant of its kind in the world.



RESERVED FOR THE MAYOR

Future of Water on Display at San Diego's Water Purification Demonstration Project

By San Diego Mayor Jerry Sanders
 This past summer, San Diego launched a one-year test of advanced water purification treatment of recycled water, located in northern San Diego. The Advanced Water Purification (AWP) Facility is a small-scale testing ground that purifies one million gallons of recycled water every day to a level similar to distilled water quality. The facility is one component of the city's Water Purification Demonstration Project that is examining the safety and cost of purifying recycled water. If this project is approved to go full-scale, the purified water would blend with the city's imported supplies at San Vicente Reservoir and would become part of the city's future drinking water supply. Another component of the Demonstration Project is the study of San Vicente Reservoir and the potential effects of adding purified water to it. During this test phase, purified water will not be sent to the reservoir as the city's drinking water. It will be used for other purposes. The city's water purifiers are designed to be able to purify water to a level similar to distilled water quality. The facility is one component of the city's Water Purification Demonstration Project that is examining the safety and cost of purifying recycled water. If this project is approved to go full-scale, the purified water would blend with the city's imported supplies at San Vicente Reservoir and would become part of the city's future drinking water supply. Another component of the Demonstration Project is the study of San Vicente Reservoir and the potential effects of adding purified water to it. During this test phase, purified water will not be sent to the reservoir as the city's drinking water. It will be used for other purposes.

E-update
 Water Reuse Program
 Water Purification Demonstration Project

Quick Links
 The City of San Diego | Public Utilities Department
 February 2011

FOR IMMEDIATE RELEASE
 January 25, 2011
 MEDIA CONTACT:
 Alma Rife
 (619) 534-2477

Construction begins on San Diego's Water Purification Demonstration Project

2012 Award Issue Project of the Year

JANUARY Preconference issue on Los Angeles

Focus on:

- Health
- Transit
- Sustainability



COVER STORY
From toilets to tap
 As water becomes more precious, more drinking water will come from treated sewage. Here's how it works.

Can San Diego Go From Toilet to Tap?

Sanders proposes plan to turn wastewater into drinking water
 By Lauren Stoney | Thursday, Jan 20, 2011 | Updated 3:19 PM PDT

Here's a thought: To solve San Diego's water problem, how about flushing our wastewater right back into the tap?

E YUCK FACTOR: GET OVER IT

An Diego sprawls above 2.5 million people wide in just 10 more years, and a projected threat to our life is an uncertain lease at the end of the road. The city's water purifiers are designed to be able to purify water to a level similar to distilled water quality. The facility is one component of the city's Water Purification Demonstration Project that is examining the safety and cost of purifying recycled water. If this project is approved to go full-scale, the purified water would blend with the city's imported supplies at San Vicente Reservoir and would become part of the city's future drinking water supply. Another component of the Demonstration Project is the study of San Vicente Reservoir and the potential effects of adding purified water to it. During this test phase, purified water will not be sent to the reservoir as the city's drinking water. It will be used for other purposes.

大統天時報
 污水變飲水 聖市再邁一步

Advanced water purification facility begins operations for San Diego's indirect potable reuse study (1)

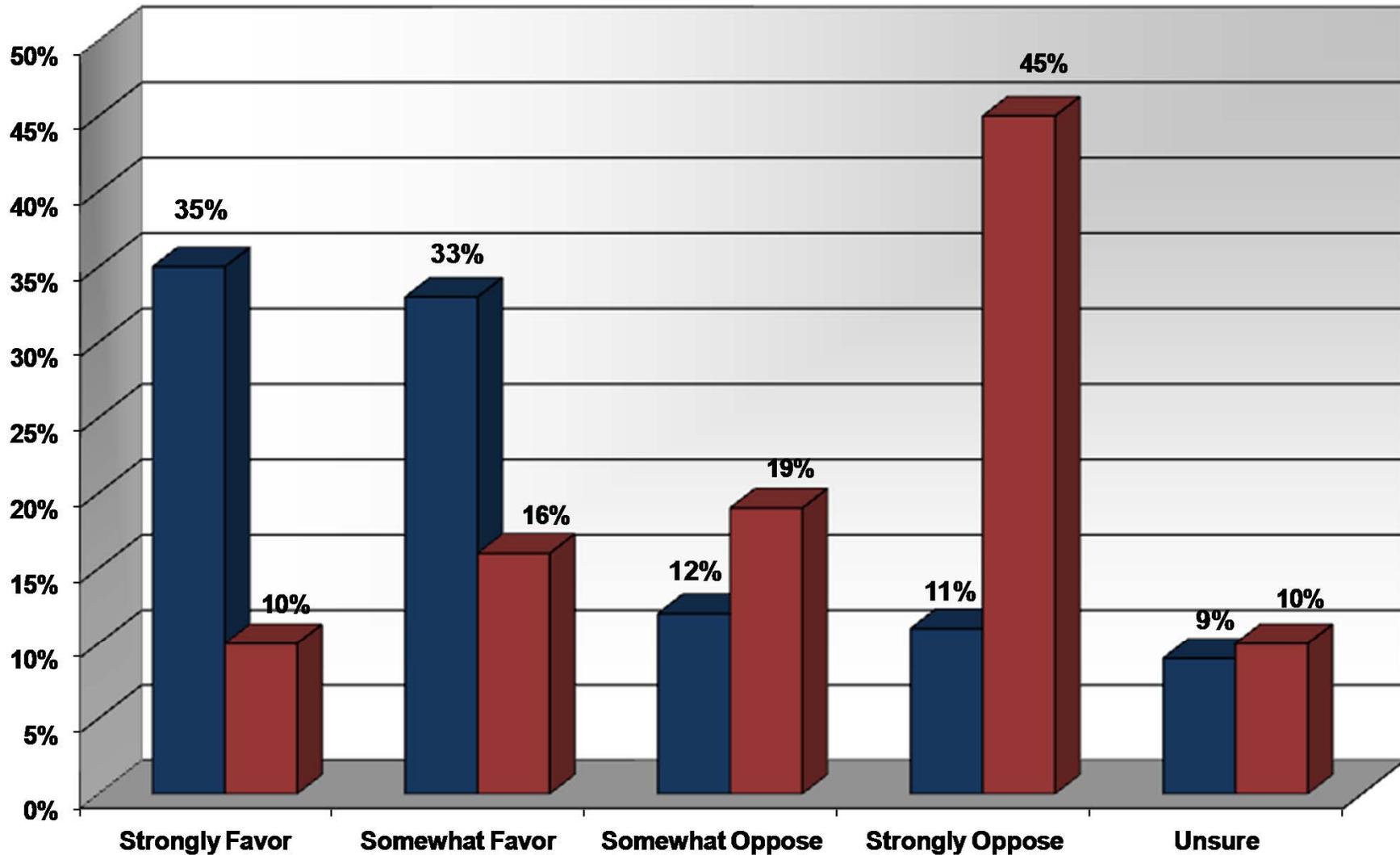
Posted by George L. Joo
 The City of San Diego's 17-year-old water purifier, the AWP Facility, has been nearly one year in the air. The facility is a 17-acre site in northern San Diego. The \$11.8 million facility was built by the city's water purifiers are designed to be able to purify water to a level similar to distilled water quality. The facility is one component of the city's Water Purification Demonstration Project that is examining the safety and cost of purifying recycled water. If this project is approved to go full-scale, the purified water would blend with the city's imported supplies at San Vicente Reservoir and would become part of the city's future drinking water supply. Another component of the Demonstration Project is the study of San Vicente Reservoir and the potential effects of adding purified water to it. During this test phase, purified water will not be sent to the reservoir as the city's drinking water. It will be used for other purposes.

Reverse osmosis tubes are a critical part of San Diego city's attempt to purify wastewater so that it meets drinking water standards.

Rea & Parker/SDCWA Research Study

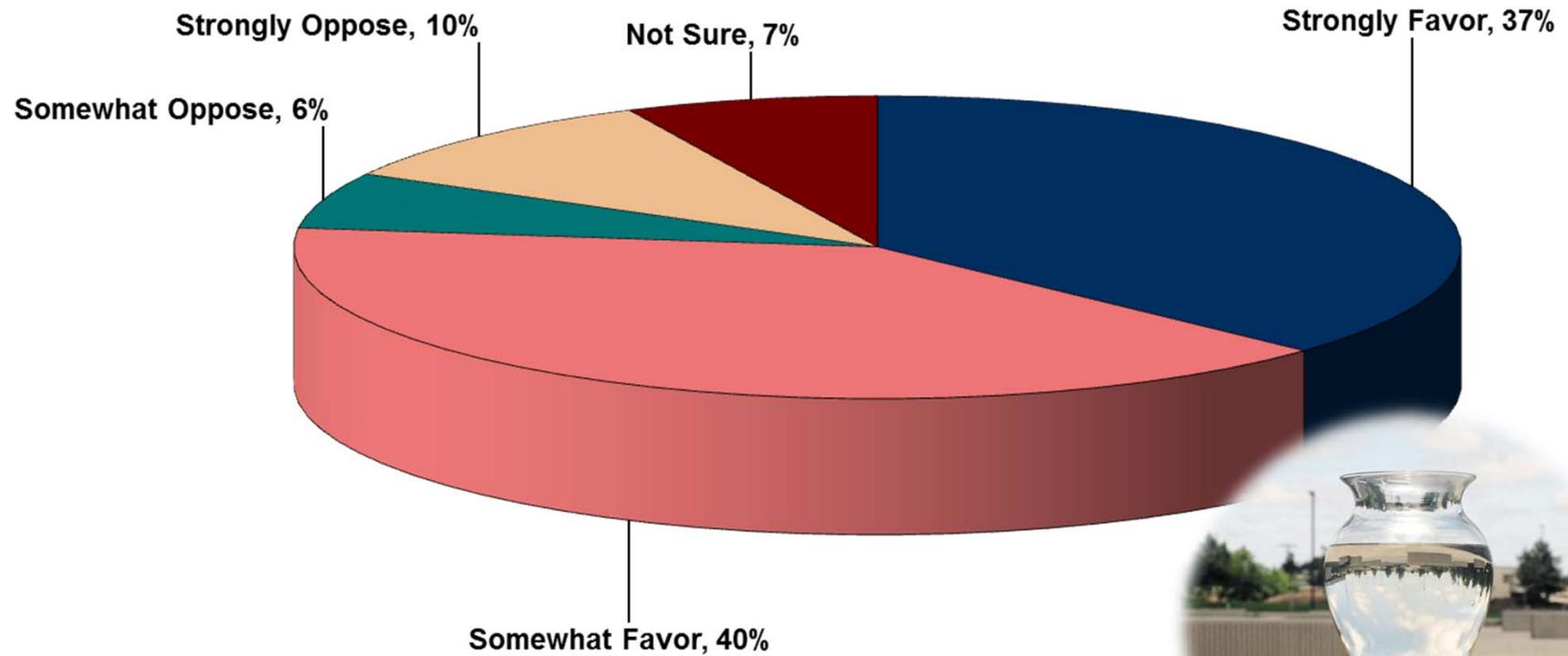
Opinion About Using Advanced Treated Recycled Water as an Addition to Drinking Water Supply

■ 2011 ■ 2004



Opinion about Water Purification Demonstration Project

(scale: 1 = Strongly Favor..4 = Strongly Oppose--mean = 1.87)



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Water Purification Demonstration Project



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