San Diego Water/Wastewater Facts

- Provide services to 8th largest US city & surrounding area
- 1.3M water & 2.5M wastewater customers from 15 agencies
- Regulated by Federal & State agencies
  - USEPA, State Water Resources Control Board
- ~$1B invested in systems over last 5 years
  - More than $412M planned capital projects over next 2 years
- Annual purchase of imported water ($209M) and facility construction and maintenance are biggest costs
85% of Our Water is Imported

SAN DIEGO IS DOWNSTREAM

San Diego
Numerous Water Challenges

- Limited local & imported supplies
- Recurring drought
- Population growth
- Bay Delta constraints
- Natural disaster risk
- Rising imported water costs

Los Angeles Times
'Severe' drought covers nearly 99.8% of California, report says

AUGUST 18, 2014, 11:43 AM
What is Being Done?

Regional:
- Water Conservation
- Desalination (SDCWA)

City of San Diego:
- Water Conservation
- Groundwater Development
- Recycled Water
- Potable Reuse (Pure Water)

Pure Water
San Diego
What is Pure Water San Diego?

• 20-year program to provide a safe, reliable and cost-effective drinking water supply for San Diego

• Uses proven water purification technology and is environmentally friendly

• Provides a locally controlled, drought-proof water supply

• Eliminates the need for expensive upgrades to the Point Loma Wastewater Treatment Plant
How Does This Process Work?

- **Wastewater** from Homes & Businesses is treated at the North City Water Reclamation Plant.
- Traditional Recycled Water Uses include irrigation and industrial processes.
- Recycled Water is purified at the Advanced Water Purification Facility, using techniques like Membrane Filtration, Reverse Osmosis, and UV Disinfection/Advanced Oxidation.
- Purified Water is then directed to the San Vicente Reservoir, which can be directly or indirectly accessed.
- **Drinking Water** is treated at the Drinking Water Treatment Plant, which includes Coagulation, Filtration, and Disinfection (Ozone & Chlorine) processes.

Water Sources:
- Local Runoff
- Imported Water (Colorado River)
- Northern California
Pure Water Systems has been successfully demonstrating 1 million gallon per day demonstration projects.

- Conducted 9,000 lab tests, routinely met all standards.
- Exceptional water quality, comparable to distilled water.
- Energy use is comparable to imported water, and cost is approximately $1,700 to $1,900 per acre-foot.

Microfiltration & Ultrafiltration

Advanced Oxidation with UV Light & Hydrogen Peroxide

Microfiltration demonstration plants are being utilized in the production of microfiltration.
Independent Advisory Panel Verified

Experienced scientists & health professionals reviewed and evaluated research studies and treatment

George Tchobanoglous, Ph.D., P.E., Chair
Professor Emeritus, UC, Davis

Richard Gersberg, Ph.D., Vice-Chair
Interim Director, SDSU Graduate School of Public Health
Director, Coastal and Marine Institute, SDSU

Michael A. Anderson, Ph.D.
University of California, Riverside

Sunny Jiang, Ph.D.
University of California, Irvine

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Joseph A. Cotruvo, Ph.D.
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Michael P. Wehner
Director of Water Quality and Technology
Orange County Water District (Fountain Valley, CA)

James Crook, Ph.D., P.E.
Water Reuse Consultant
(Boston, Massachusetts)

David R. Schubert, Ph.D.
The Salk Institute for Biological Studies

Audrey D. Levine, Ph.D., P.E., DEE
U.S. Environmental Protection Agency
State & Federal Regulators Are Supportive

- September 7, 2012, California Department of Public Health approves the San Vicente Reservoir Augmentation Concept

- February 12, 2013, the Regional Water Board supports the City’s efforts to develop the San Vicente Reservoir Augmentation Project
Others Are Doing It Successfully

Orange County, CA

- Operating since 2008
- Places purified water into the groundwater basin
- Currently expanding its capacity

Fairfax, VA

- Operating since 1978
- Recycled water is added to a surface storage reservoir
- Potable water supply source for Fairfax County, VA
Developing Our Local Water Supply

**Initial phase 2023**

15 MGD

Wastewater will be purified at North City Plant and delivered to San Vicente Reservoir

**Long-term 2035**

83 MGD

Wastewater will be purified at Harbor Drive facility and South Bay Plant and delivered to San Vicente and Otay Reservoirs
Pure Water San Diego Saves Money

About $250 million in ratepayer savings

System upgrades w/o Pure Water

Pure Water San Diego
Who Supports Pure Water?

- Elected Officials
  - City Council Resolution, April 29, 2014
- Environmental Groups
- Wastewater Participating Agencies
- Professional Engineering Community
- Water Reliability Coalition
- Business Community
- Independent Rates Oversight Committee
What Can I Do?

• Visit our website: PureWaterSD.org

• Register for tours: PureWaterSD.org/tours

• Join our mailing list or sign a support card
Questions?
Back Up Slides
**WATER PURIFICATION PROCESS**

**Multi-BARRIER Water Purification Steps**

- Recycled Water → Membrane Filtration → Reverse Osmosis → UV / Advanced Oxidation → San Vicente Reservoir → Treatment at Drinking Water Plant → Drinking Water Supply

**Water Purification Process**

- Microfiltration & Ultrafiltration
- Reverse Osmosis
- Ultraviolet Light / Hydrogen Peroxide
Pure Water San Diego Next Steps

• Stakeholder and customer outreach - Ongoing

• Solicitation for engineering and technical support services - Underway

• Finalize facilities plan and cost estimate/Rate impact - September 2014

• Point Loma permit application - Jan 2015

• Secondary equivalency approval – Enacted Law, December 2015
Pure Water Will be Cheaper in the Long Run

Pure Water becomes cheaper than imported water
The Pure Water San Diego Water Supply Will Require Investment

- Water and Wastewater rates are set every 2 years
- Pure Water San Diego will annually require a 1-2% water bill increase from 2016-20 and 3-5% annually from 2021-25
- It will require an annual increase of about 3% on the monthly wastewater bill starting in 2019 through 2025
- Other costs will also affect our water and wastewater including imported water costs, desalination costs, and repair/replacement of the water and wastewater systems
- Pure Water San Diego will SAVE money in the long run