



# San Diego Water Board Meeting

## Recycled Water Information Item

February 11, 2015



# San Diego Water/Wastewater Facts



Provide services to 8<sup>th</sup> 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

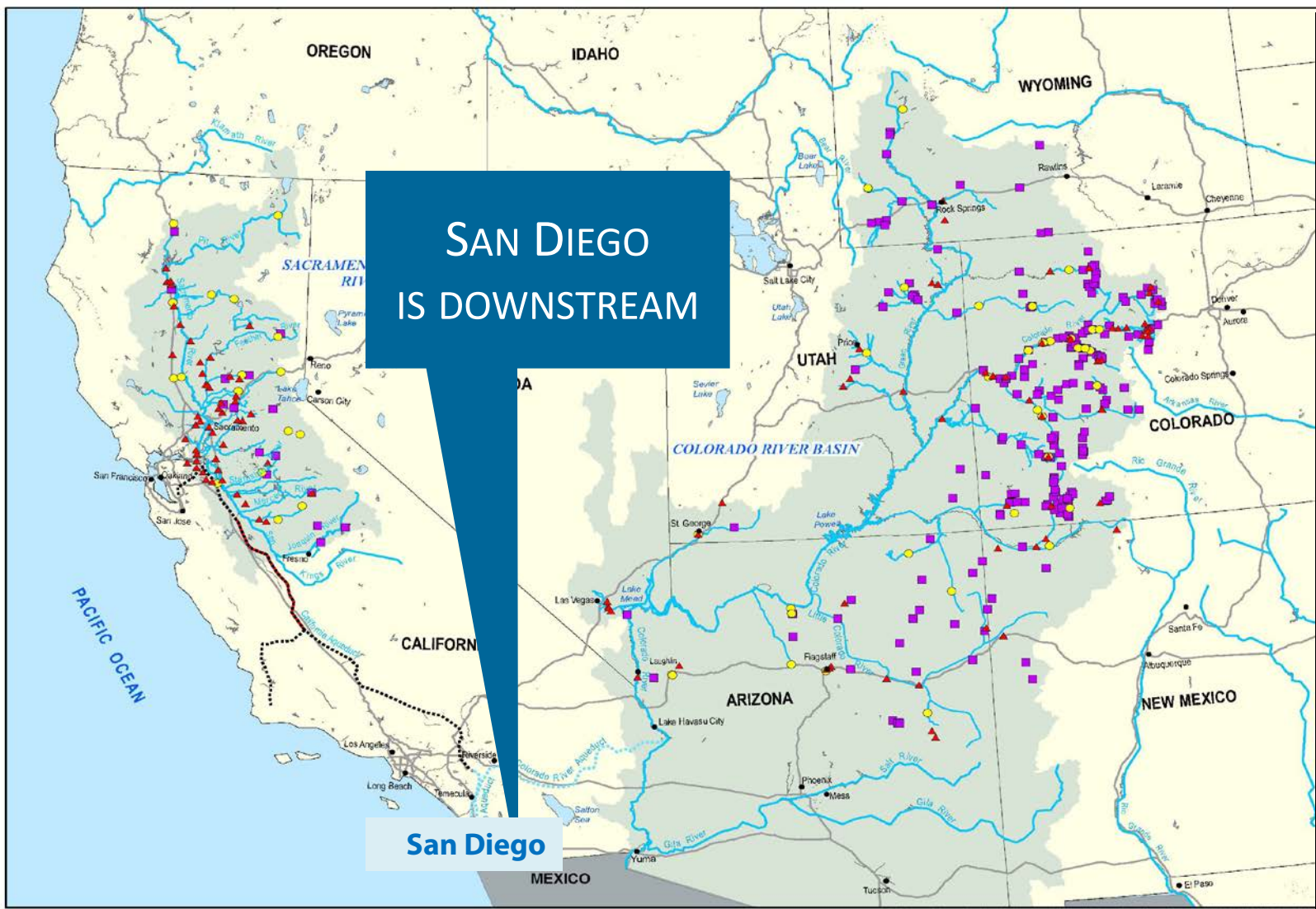
More than \$412M planned capital projects over next 2 years

Annual purchase of imported water (\$209M) and facility construction and maintenance are biggest costs





# 85% of Our Water is Imported

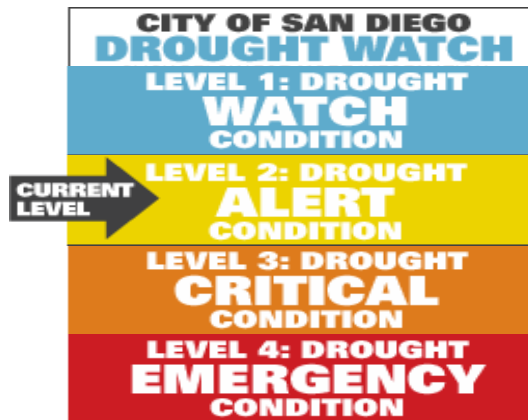
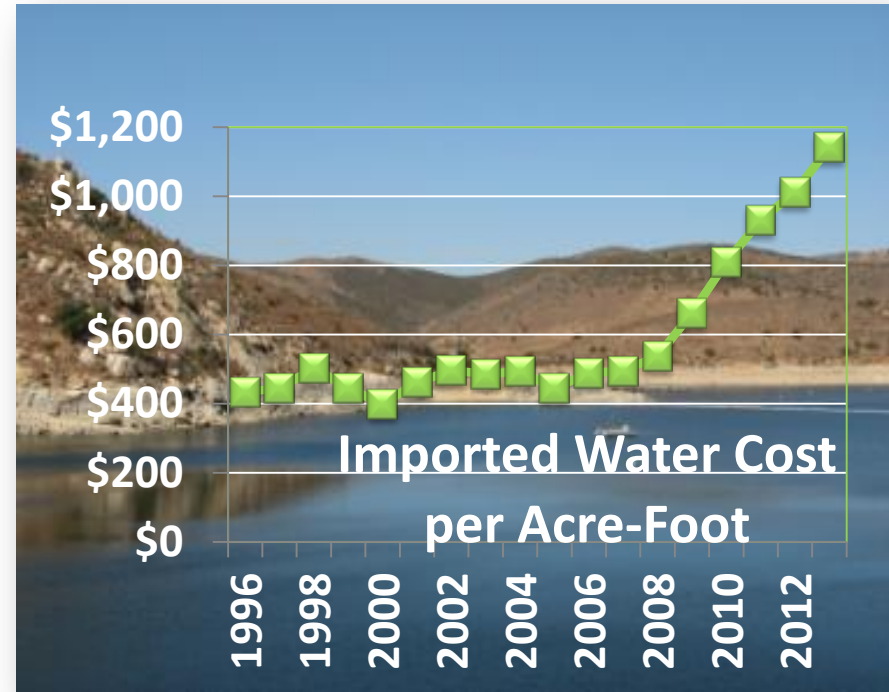






# Numerous Water Challenges

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





# What is Being Done?

## Regional:

- Water Conservation
- Desalination (SDCWA)



## City of San Diego:

- Water Conservation
- Groundwater Development
- Recycled Water
- Potable Reuse





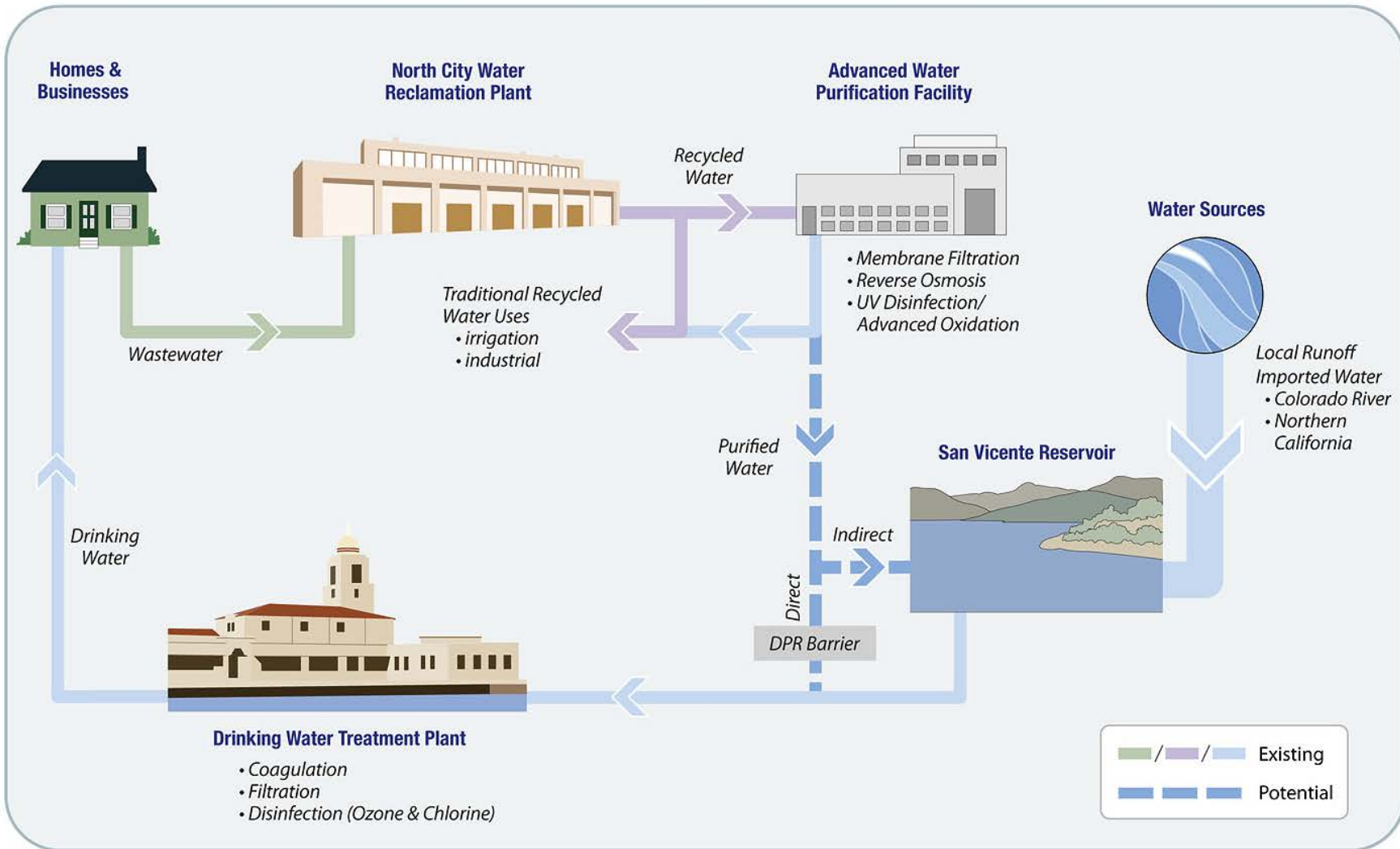
# What is Pure Water San Diego?

- 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?







# Pure Water San Diego Has Been Successfully Demonstrated

1 million

- Conducted
- Except
- Energy consumption is approximately

Microfiltration & Ultrafiltration



Project

met all standards

no distilled water

water and cost is

not

Advanced Oxidation/UV Light Hydrogen Peroxide







# 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

**[Richard Bull](#), Ph.D.**

Consulting Toxicologist

MoBull Consulting (Richland, WA)

**[Joseph A. Cotruvo](#), Ph.D.**

Principal

Joseph Cotruvo Associates (Washington, D.C.)

**[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



# 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



# 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







# Developing Our Local Water Supply

Initial phase 2023

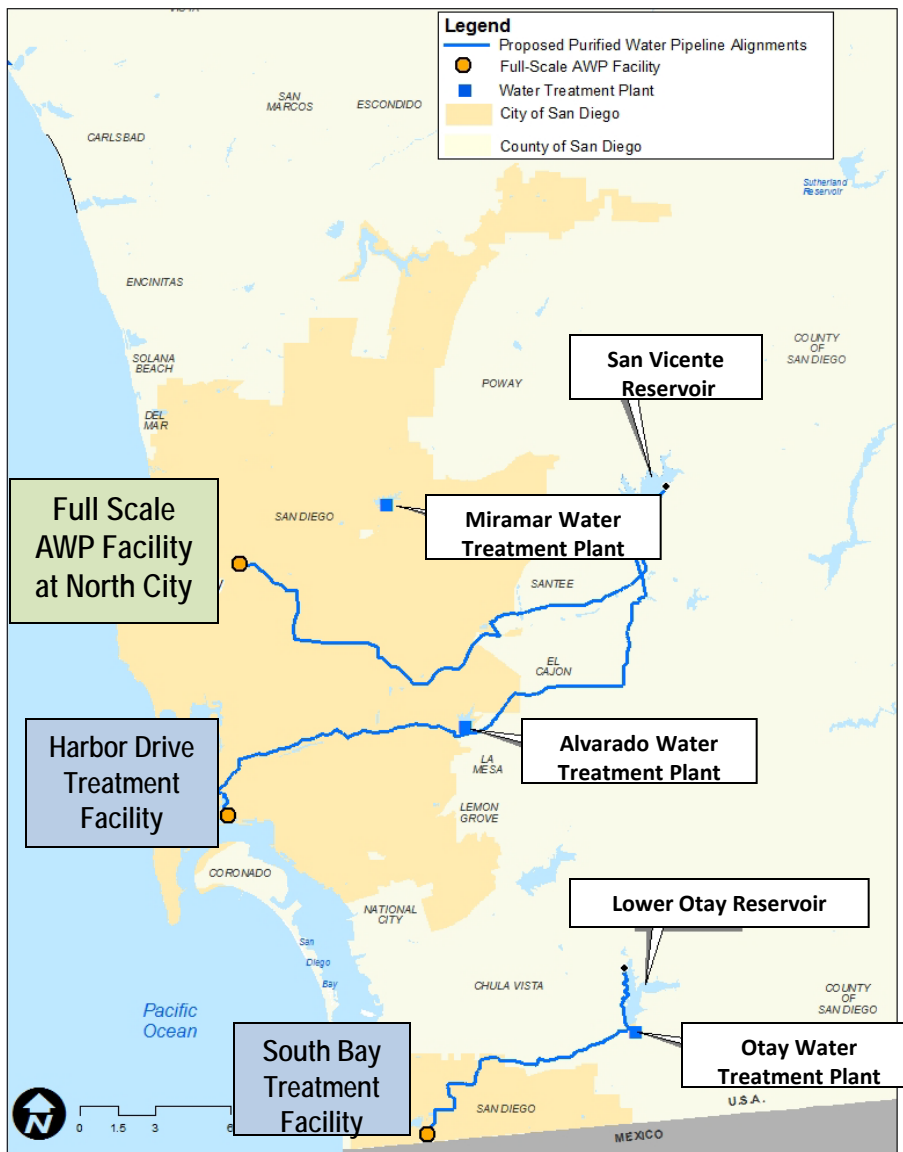
15 MGD

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

Long-term 2035

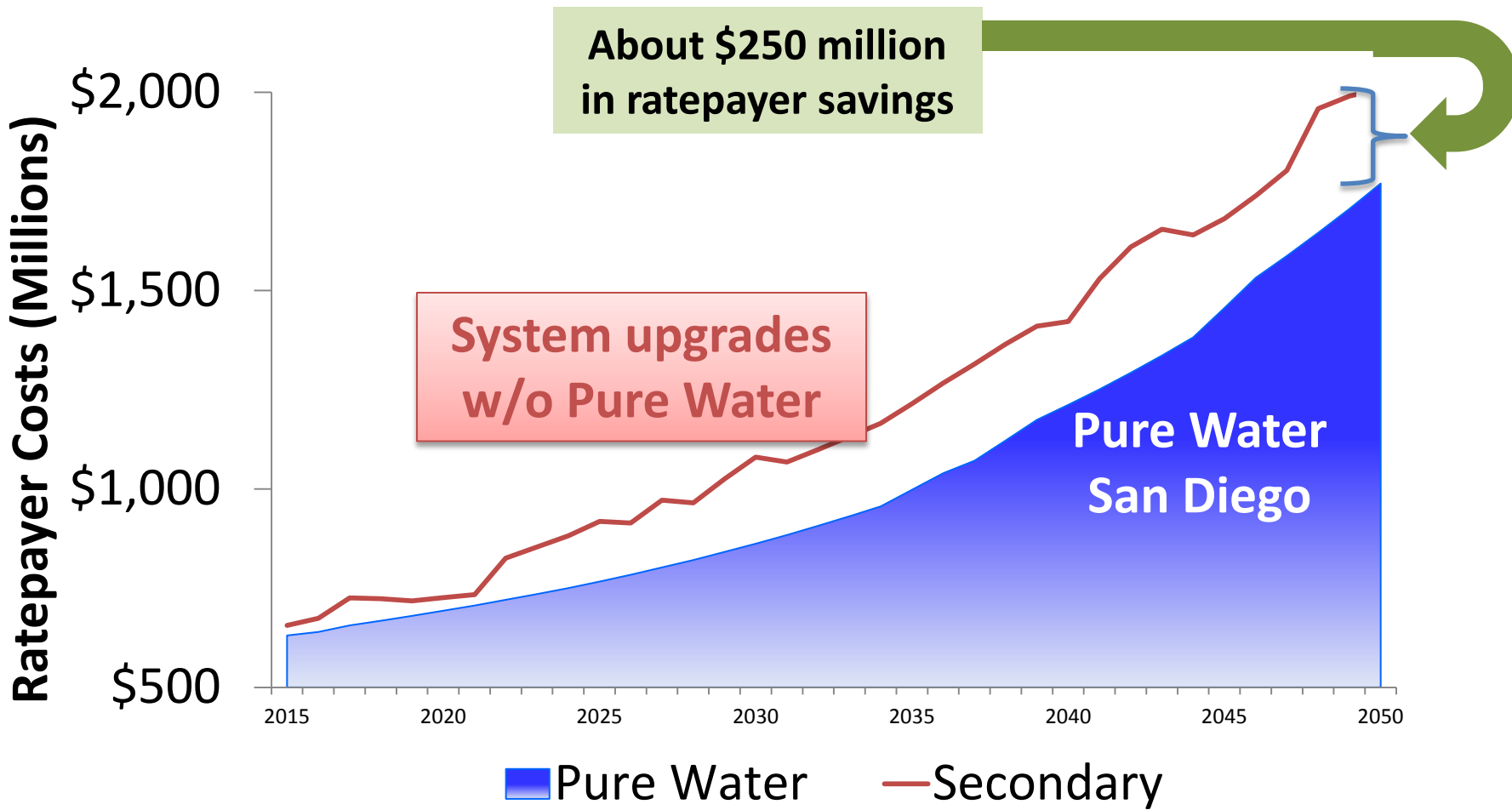
83 MGD

Wastewater will be purified at Harbor Drive Treatment Facility and South Bay Plant and delivered to San Vicente and Otay Reservoirs





# Pure Water San Diego Saves Money





# Who Supports Pure Water?

- Elected Officials
  - City Council Resolution, April 29, 2014
  - City Council Point Loma permit application approval, Nov. 18, 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



**Pure Water San Diego**



**@PureWaterSD**



**purewatersd**







**Please check all that apply:**

I support the Pure Water San Diego Program.

I would like to receive updates about Pure Water San Diego.

I would like a presentation given to my organization.

**Please send information to:**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

[purewatersd@sandiego.gov](mailto:purewatersd@sandiego.gov) · (619) 533-7572 · [www.purewatersd.org](http://www.purewatersd.org)



# Questions?





City of San Diego  
**PUBLIC UTILITIES**  
Water & Wastewater

# Back Up Slides

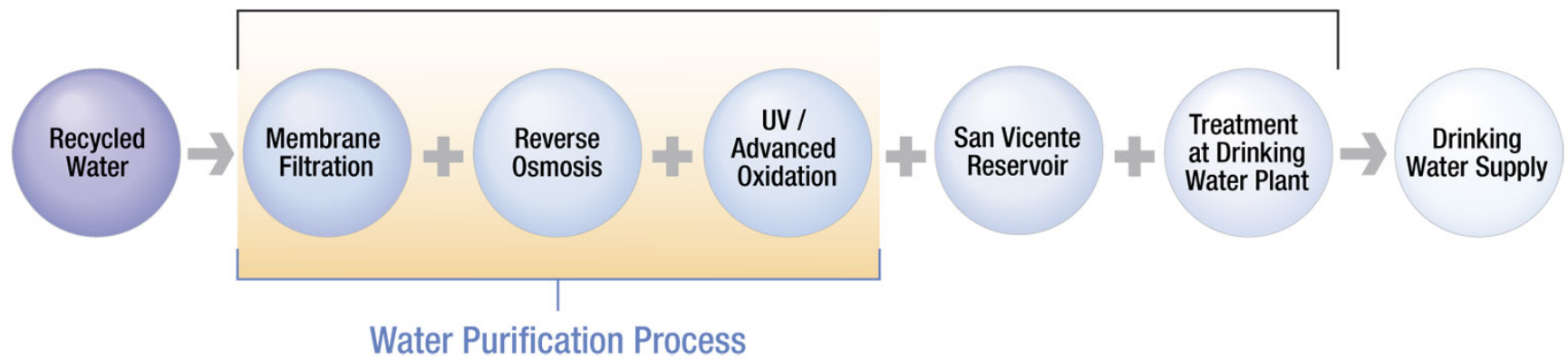






# WATER PURIFICATION PROCESS

## Multi-Barrier Water Purification Steps



### Microfiltration & Ultrafiltration



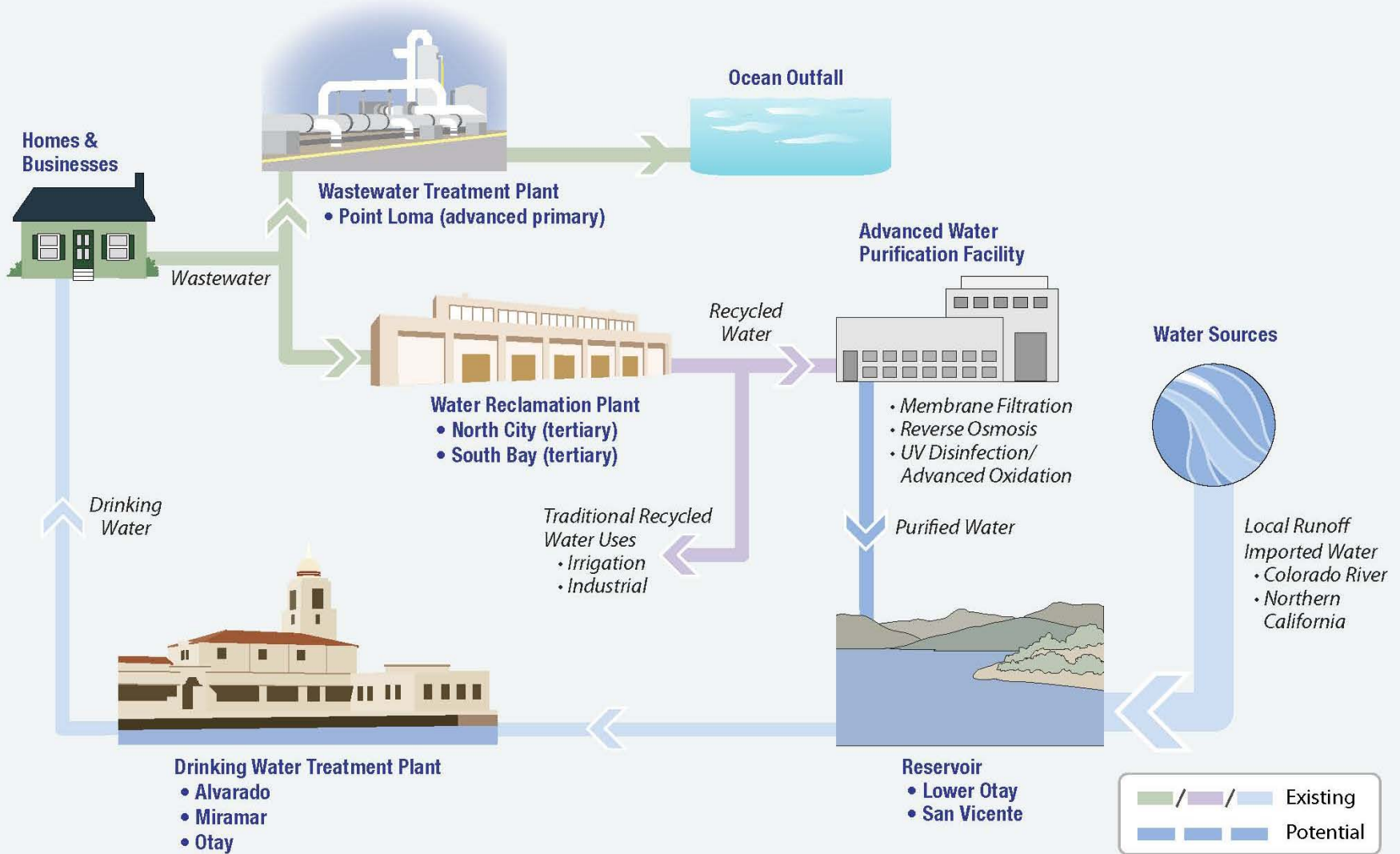
### Reverse Osmosis



### Ultraviolet Light / Hydrogen Peroxide



# URBAN WATER CYCLE



Revised: 12/14

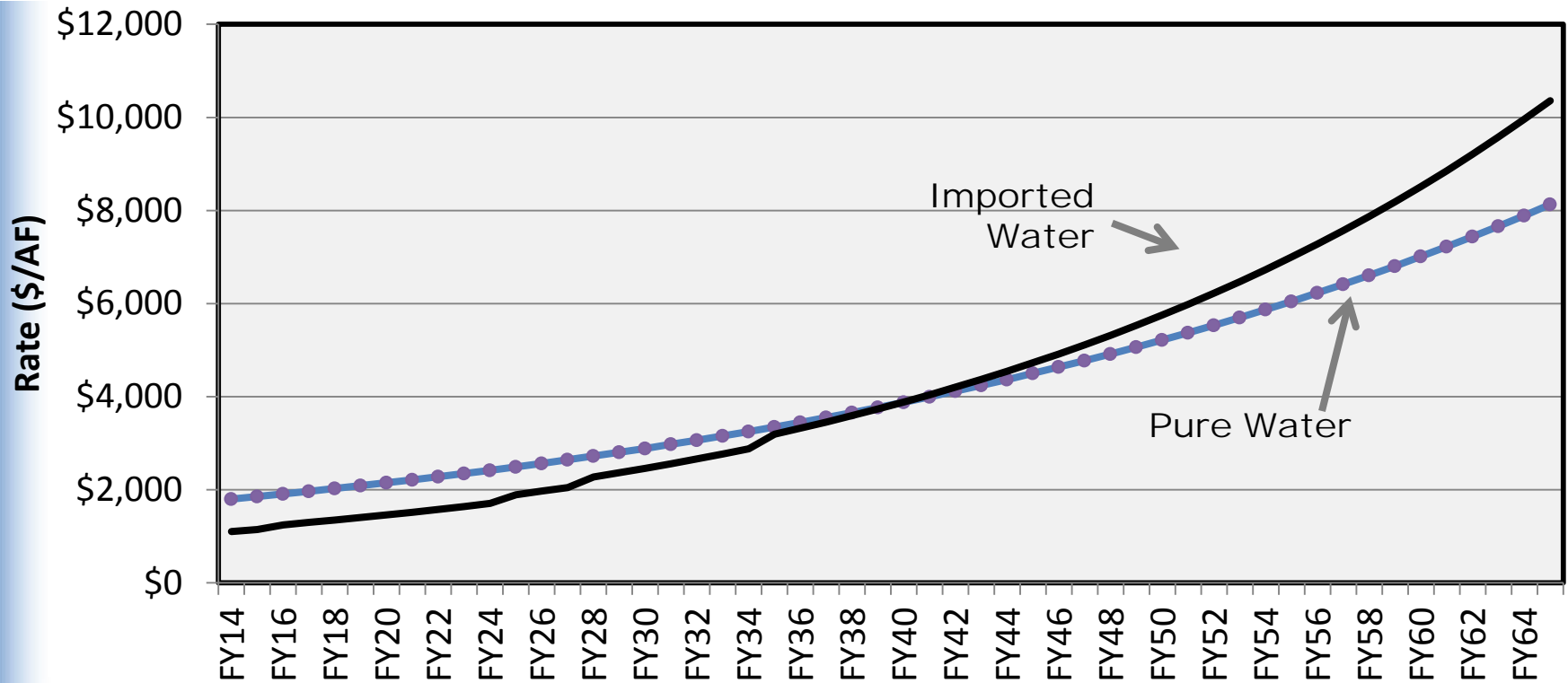




# Pure Water Will be Cheaper in the Long Run

Pure Water becomes cheaper than imported water

Comparison of Pure Water Costs and Imported Costs







# 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