

Point Loma and Pure Water SAN DIEGO

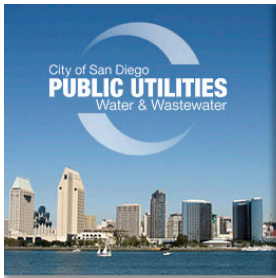
An Integrated Water and Wastewater Solution

Water Reliability Coalition

September 16, 2014

Ann Sasaki, Assistant Public Utilities Director





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, CDPH,
San Diego Water
Board

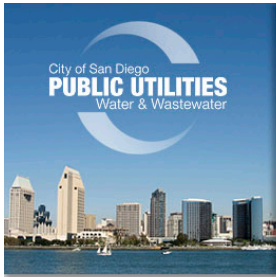


~\$1B invested in
systems over last
5 years

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



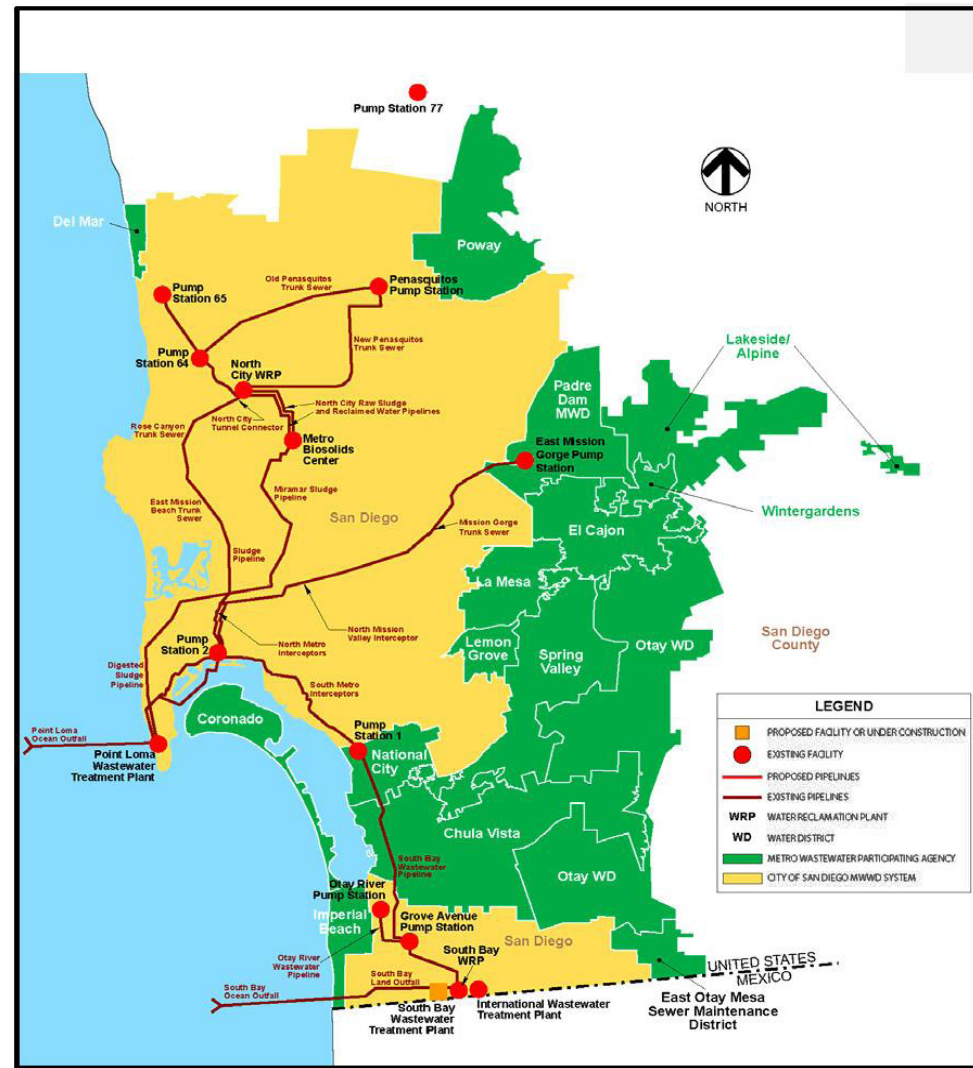
Annual purchase
of imported
water (\$209M)
and facility
construction and
maintenance are
biggest costs

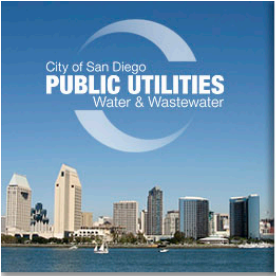


Metropolitan Sewerage System

Significant Regional Asset:

- 2.5 Million served
- 450 Square miles
- 12 - Participating Agencies
- 4 - Wastewater Facilities
- 8 - Major Pump Station
- Two Ocean Outfalls

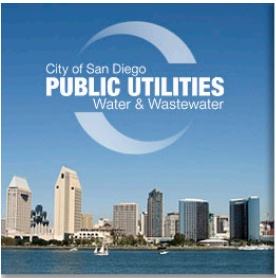




Pt Loma - Current Status

- Pt. Loma WWTP is the backbone of the sewerage system
- Pt. Loma WWTP is a chemically enhanced advanced primary treatment plant
- Pt. Loma WWTP has a 4.5 mile long deep ocean outfall (310 feet in depth)
- Outfall provides superior dispersion and a high degree of dilution

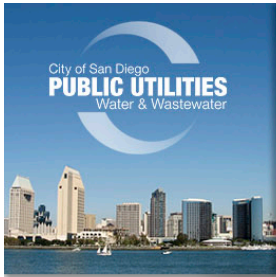




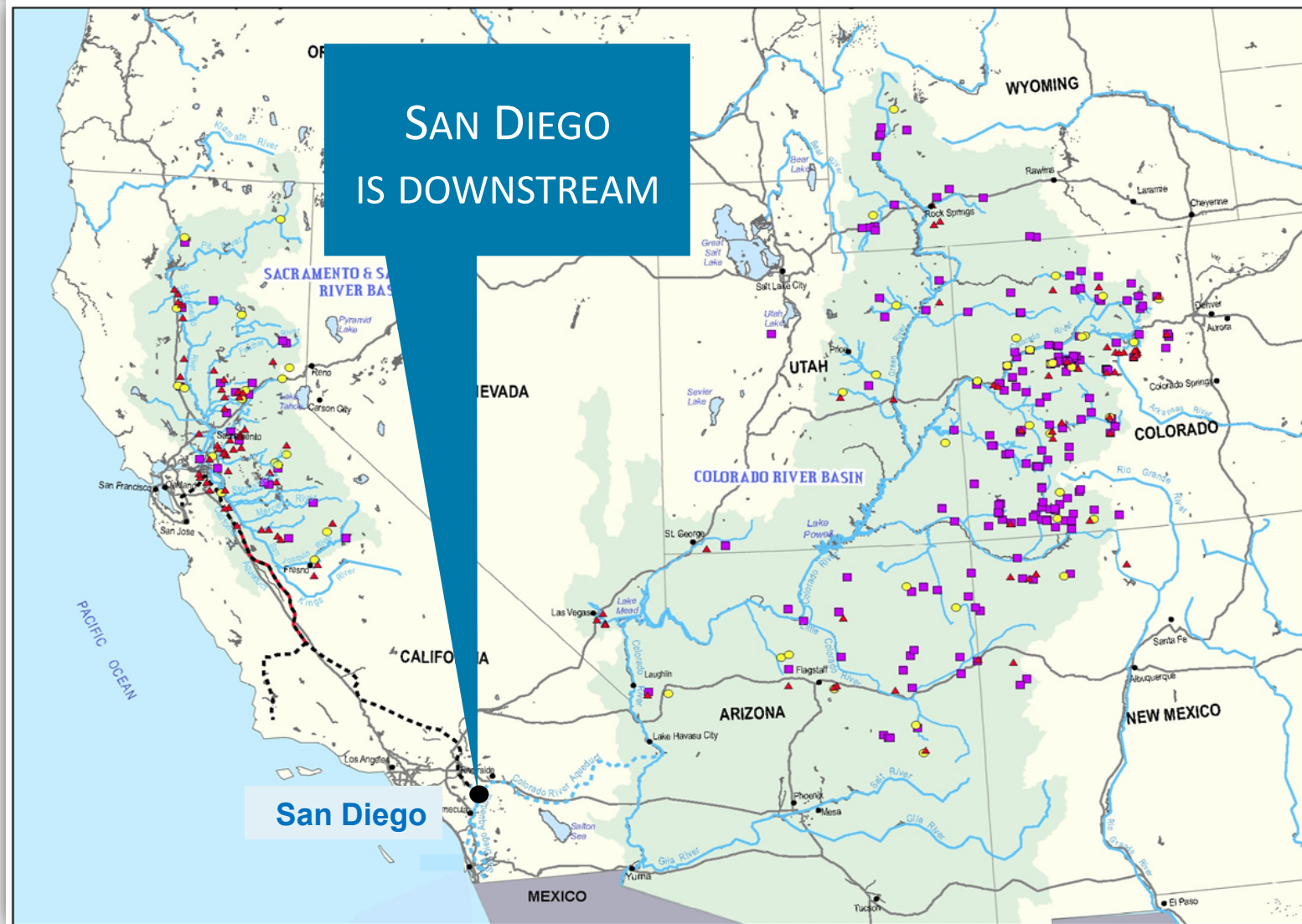
Pt Loma - Current Status

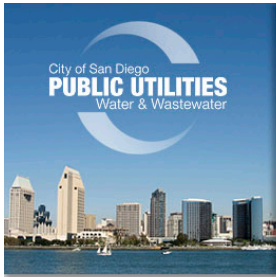
- Extensive ocean monitoring has not identified any negative impact to marine organisms surrounding the outfall
- Operates with a modified Clean Water Act 301(h) permit
 - Alternative discharge standards for Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD)
- The current permits expires on July 31, 2015





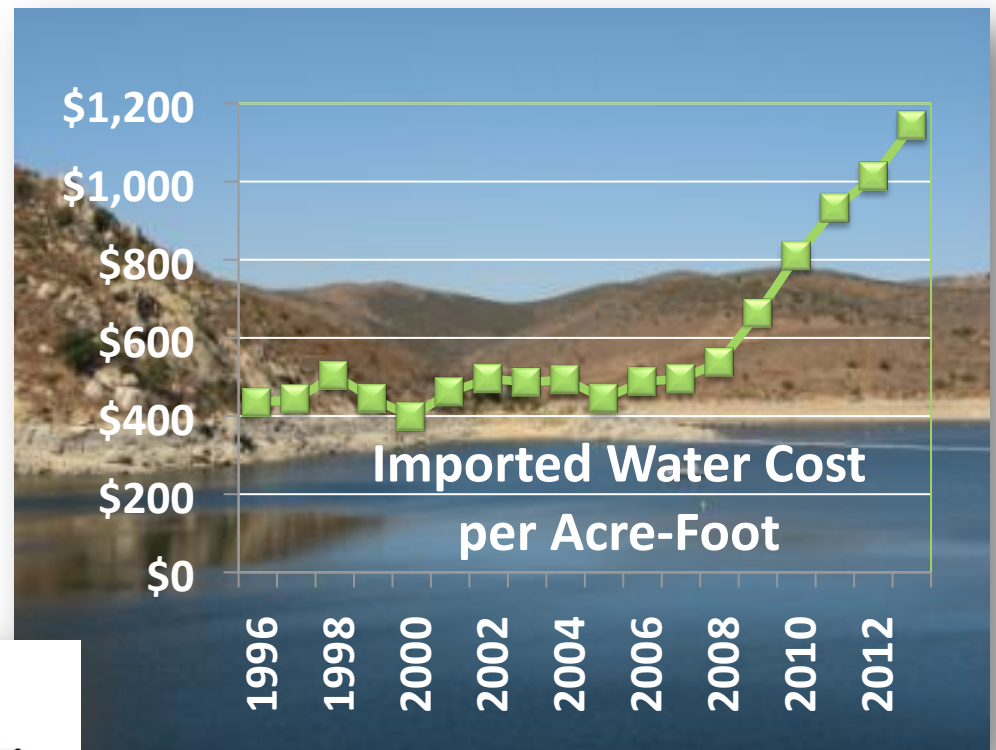
85% of Our Water is Imported





Water Supply Challenges

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

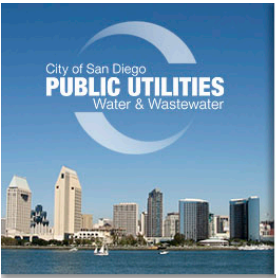


Los Angeles Times

California's drought getting even worse, experts say

Drought worsens in California since last week; 33% of the state facing exceptional drought conditions

JUNE 19, 2014, 5:30 PM



What is Being Done?

Regional:

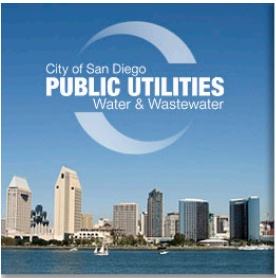
- Importing Water
- Water Conservation
- Desalination (SDCWA)



City of San Diego:

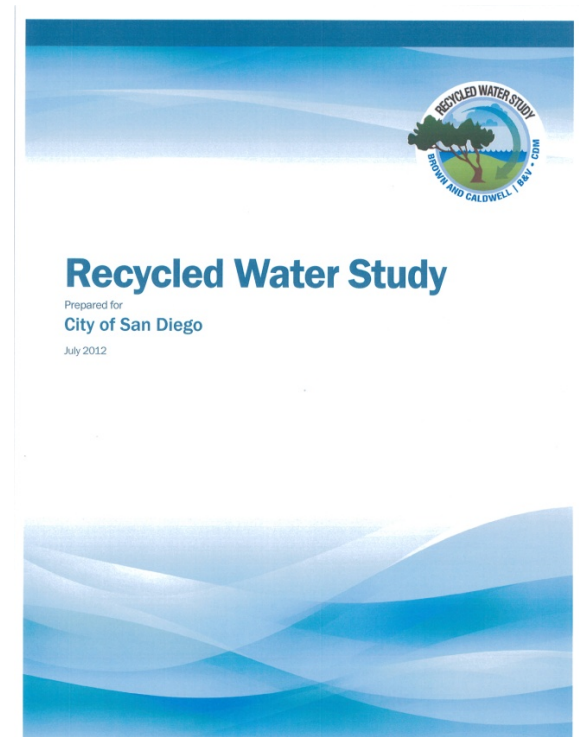
- Water Conservation
- Groundwater Development
- Recycled Water
- Potable Reuse (Pure Water)

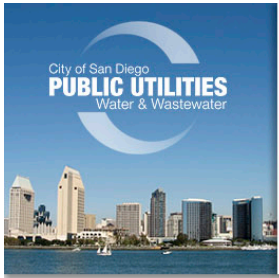




Pure Water - Integrated Water Wastewater Solution

- 2012 Recycled Water Study
 - Compliance with Cooperative Agreement
 - Identified the feasibility of creating up to 83 mgd of safe, reliable, locally controlled drought proof water
 - Diverts flow upstream of Point Loma, resulting in less ocean discharge



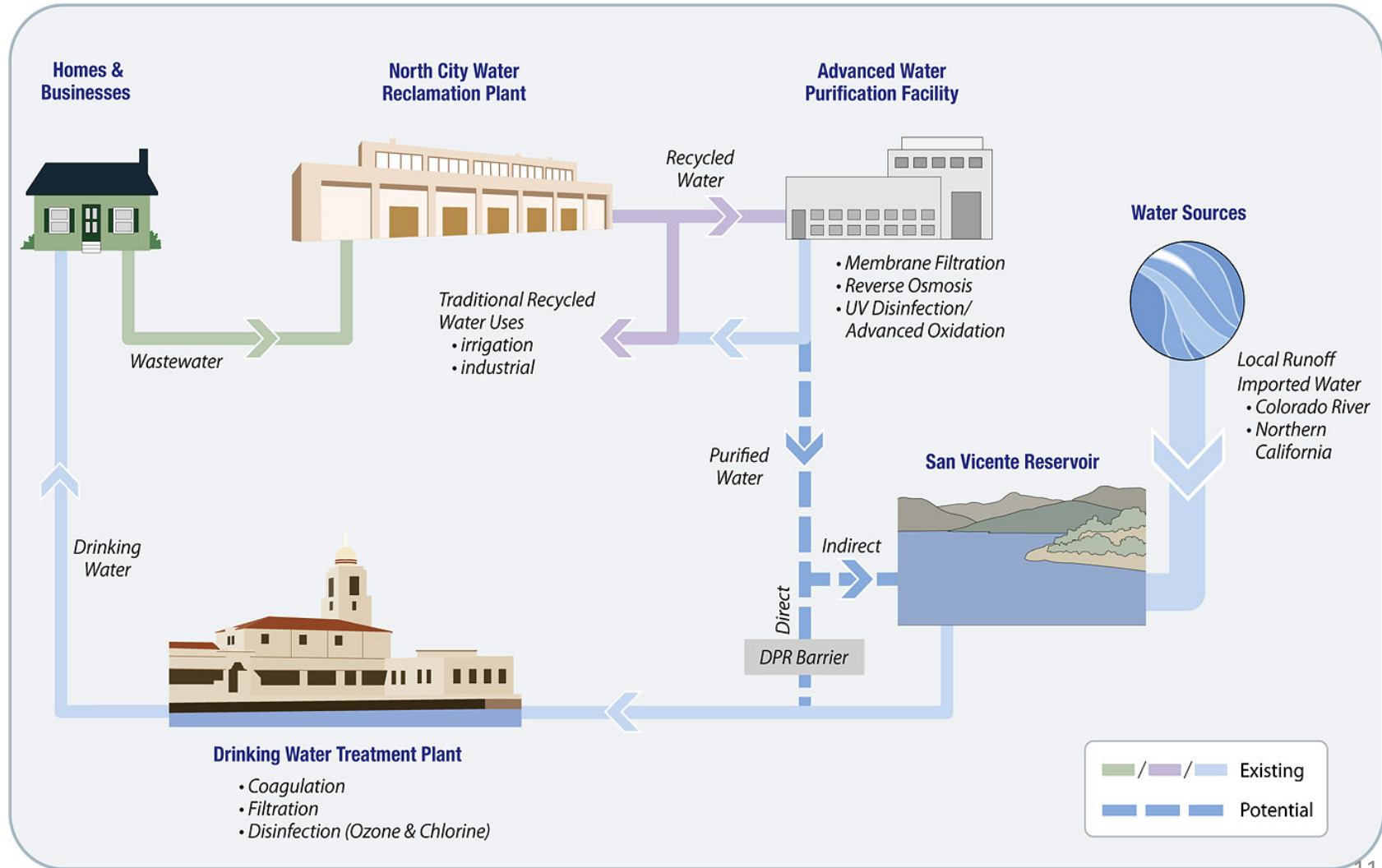


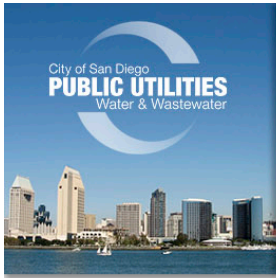
Pure Water Program

- 20 year program to provide a safe, reliable and local drinking water supply for San Diego
- Uses proven water purification technology and is environmentally sustainable
- Is a cost-effective solution, eliminating the need for expensive upgrades to the Point Loma Wastewater Treatment Plant



How does Pure Water Work?





Pure Water & ...go Has Been Succes...trated

n Project

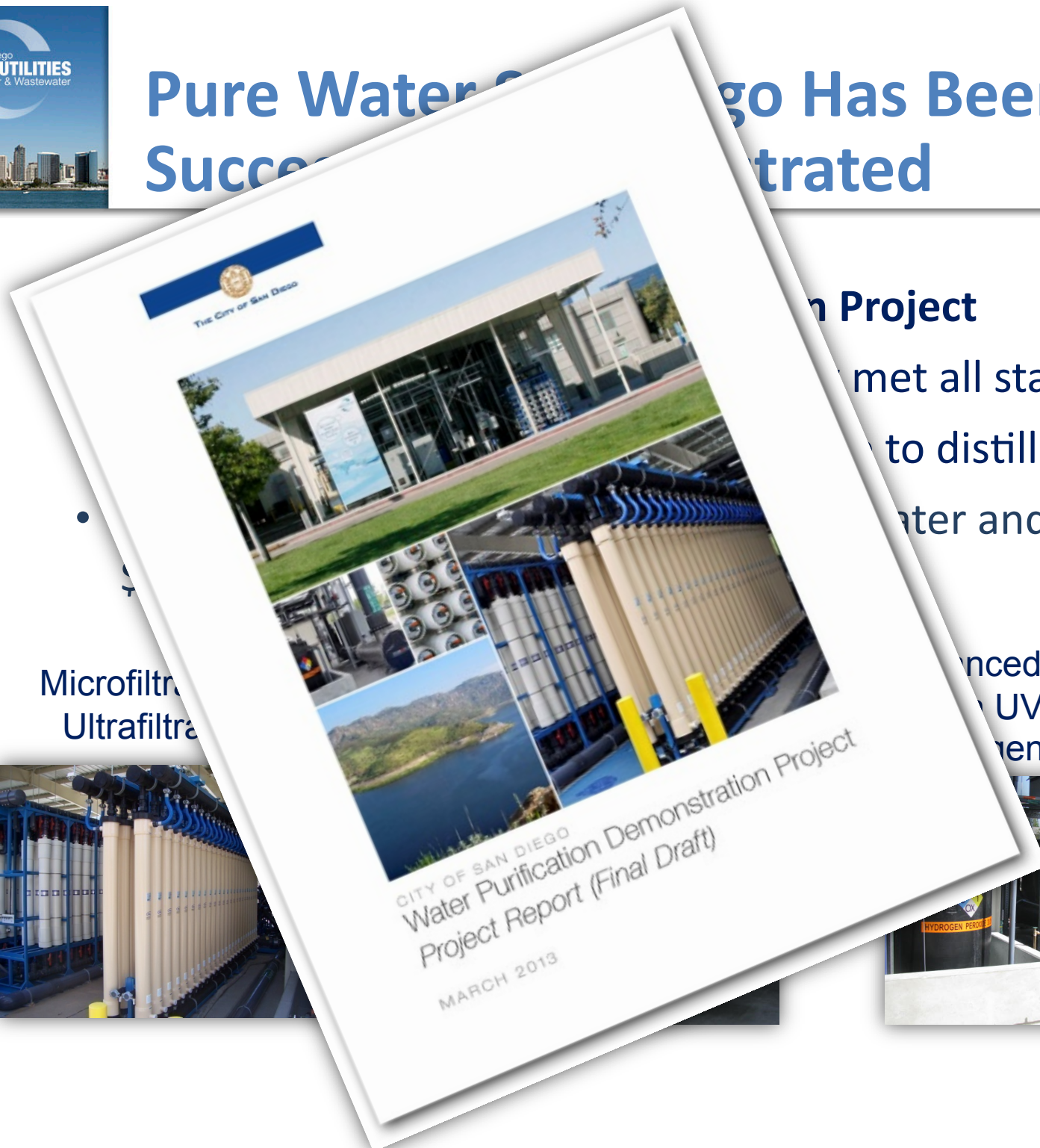
met all standards

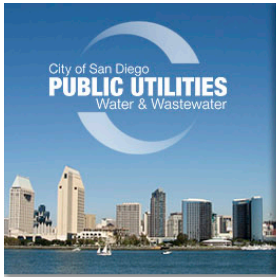
to distilled water

water and costs about

Microfiltration
Ultrafiltration

anced 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

Professor and Head, Division of Occupational and
Environmental 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.

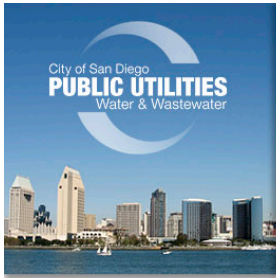
Water Reuse Consultant (Boston,
Massachusetts)

[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

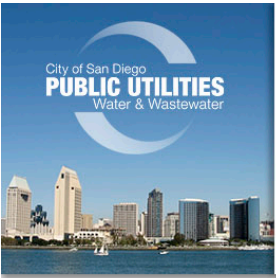


- Operating since 2008
- Places purified water into the groundwater basin
- Currently expanding its capacity

Fairfax, VA



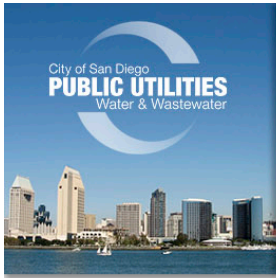
- Operating since 1978
- Recycled water is added to a surface storage reservoir
- Potable water supply source for Fairfax County, VA



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





Pure Water - Developing Our Local Water Supply

Initial
phase
2023

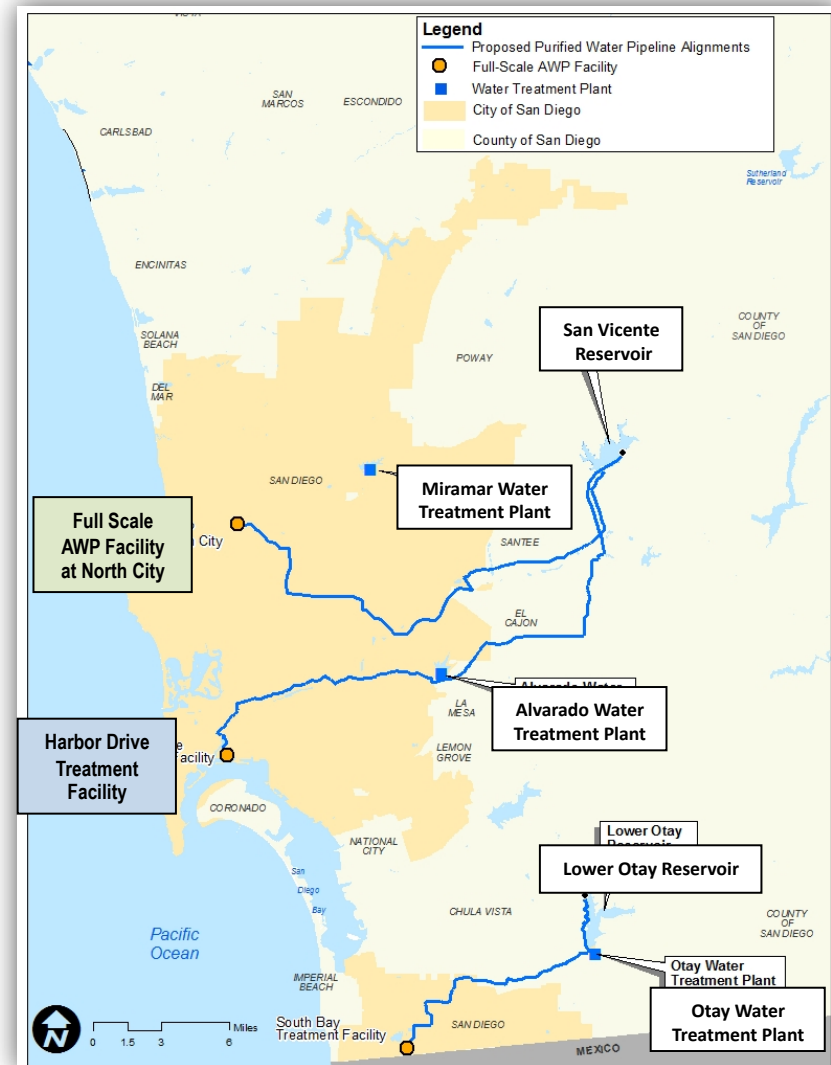
15 MGD

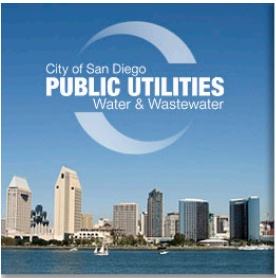
Wastewater will be purified at North City Plant and delivered to San Vicente Reservoir

Long-term
2035

83 MGD

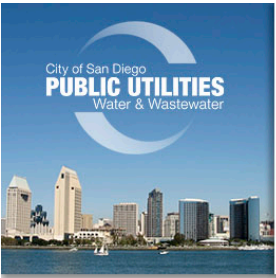
Wastewater will be purified at Harbor Drive and South Bay Plants and delivered to San Vicente and Otay Reservoirs





Pt Loma Modified Permit Options

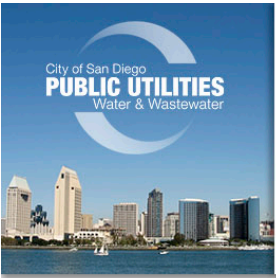
- **Option A** - Convert the Pt. Loma Wastewater Treatment Plant to secondary treatment
- **Option B** - Apply only for a modified permit
- **Option C** - Apply for a modified permit, commit to Pure Water, and seek secondary equivalency



Pt Loma Modified Permit Option - A

- Convert the Pt. Loma WWTP to secondary treatment
 - Very costly, \$1.8 Billion (2035)
 - Site constraints
 - Unnecessary, no negative impacts to ocean environment
 - No new water is created; a resource is discharged into the ocean

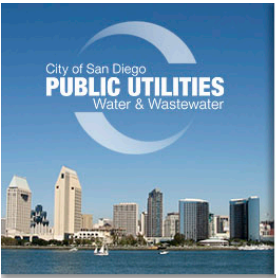
Not Recommended



Pt Loma Modified Permit Option - B

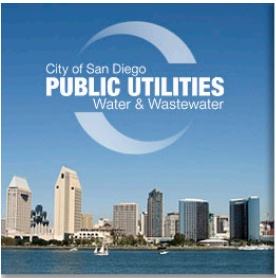
- Apply only for a modified permit
 - City continues to meets all regulatory requirements
 - No negative impacts to ocean environment
 - No new water is created; a resource is discharged into the ocean
 - Environmental and Coastal Commission Opposition

Not Recommended



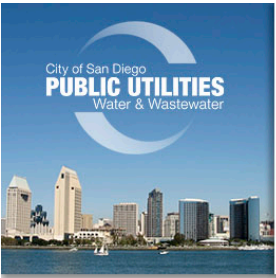
Pt Loma Modified Permit Option C – Recommended Option

- Apply for a modified permit, commit to Pure Water, and seek secondary equivalency
 - City continues to meets all regulatory requirements
 - No negative impacts to ocean environment
 - Creates locally controlled, drought- proof source of water; reuses a resource that would otherwise be wasted
 - Environmental Community support
 - Resolves uncertainty surrounding future Pt. Loma permits



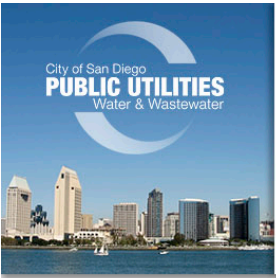
Option C – Modified Permit

- Comply with CWA Section 301(h) and 301(j)
 - Pt Loma remains as a chemically enhanced advanced primary plant with a capacity of 240 million gallons per day
 - Total Suspended Solids reduced from 13,598 metric tons/year to:
 - 12,000 mt/year by December 31, 2015
 - 11,500 mt/year by December 31, 2025*
 - 9,942 mt/year by December 31, 2027*
- *Subject to approval of secondary equivalency



Option C - Commitment to Pure Water

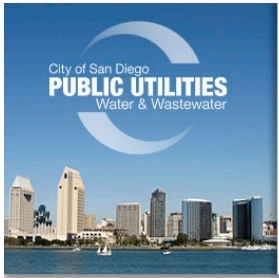
- Permit Application Would Include:
 - Commitment to start Environmental review and Design work for at least 15 mgd of Pure Water with specific milestones
 - Goal to produce:
 - at least 15 mgd of water by 2023
 - an additional 15 mgd of water by 2027
 - an additional 53 mgd of water by 2035
 - * Subject to approval of secondary equivalency



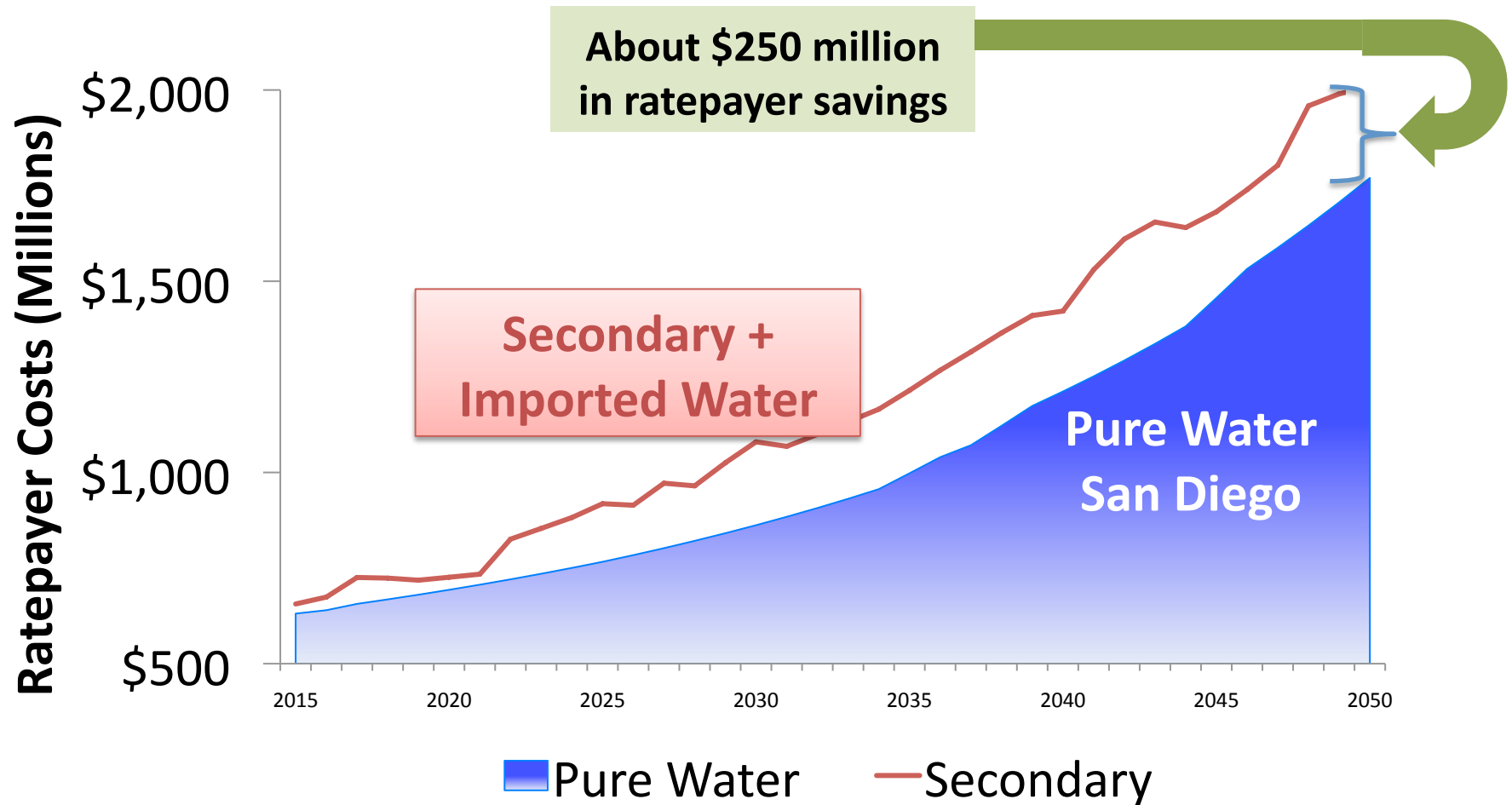
Option C - Secondary Equivalency

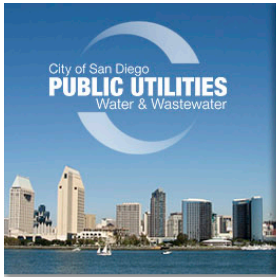
- Seek Federal approval to comply with the Clean Water Act by defining secondary equivalency standards:
 - Minimum Removal Rates for TSS and BOD
 - Cap on annual TSS mass emissions
 - Concentration-based limit on TSS in effluent
 - Commitment to current enhanced ocean monitoring
 - Production of at least 83 mgd of potable reuse by 2035





Option C - The Cost Effective Alternative

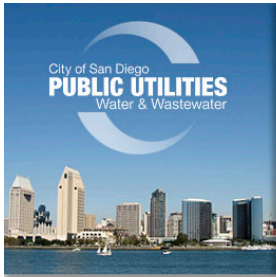




Pure Water San Diego vs Secondary Costs

Expenditure Category	Pure Water San Diego 2035	Secondary Treatment 2035	Pure Water San Diego 2050	Secondary Treatment 2050
Capital Costs	\$1.98B	\$1.8B	\$1.98B	\$2.1B
Supporting Treatment Costs	\$0.67B		\$1.05B	
Imported Water Purchases	<u>\$ 7.3B</u>	<u>\$8.2B</u>	<u>\$17.7B</u>	<u>\$21.3B</u>
Total	\$ 9.95B	\$10.0B	\$20.73B	\$23.4B
SAVINGS	\$0.05 B		\$2.67B	

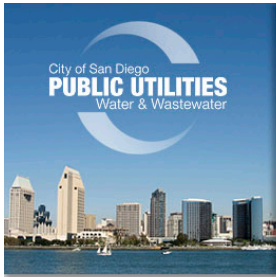
*Value of water is a present value at SDCWA current rate of \$1,100/AF multiplied by Pure Water production totals. Estimates as of August 2014



Water Rate Projections*

Description	Forecast 2016	Forecast 2017	Forecast 2018	Forecast 2019	Forecast 2020	Est. Range 2021 - 25
Water System						
CWA Imported Water			To be determined			
CWA Desal						
Pure Water Program	1%*	1%*	1.8%-2.2%	1.8%-2.2%	1.8%-2.2%	1.8%-2.2%
Total Water Rate Adjustment			To be determined			

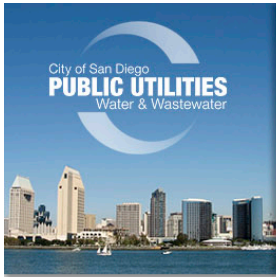
*Assumes San Diego receives grant and State Revolving Funding Loans
Estimates as of August 2014



Wastewater Rate Projections*

	Forecast	Forecast	Forecast	Forecast	Forecast	Est. Range
Description	2016	2017	2018	2019	2020	2021 – 25
Wastewater System			To be determined			
Pure Water Program	0%	0%	0%	2.9%-3.1%	2.9%-3.1%	2.9%-3.1%
Total Wastewater Rate Adjustment			To be determined			

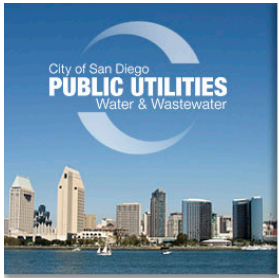
*Assumes San Diego receives grant and State Revolving Funding loans
Estimates as of August 2014



Effect on Household Monthly Cost – Pure Water Impact

<u>Typical Single Family User</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Water Cost (12 HCF*/mo)	\$0	\$0	\$0.71	\$1.52	\$1.80	\$2.10	\$2.43
Wastewater Cost (9 HCF/mo)	\$0	\$0	\$0	\$0	\$0	\$0.72	\$1.45
Total Residential Cost	\$0	\$0	\$0.71	\$1.52	\$1.80	\$2.82	\$3.88

*1 HCF = 748 gallons



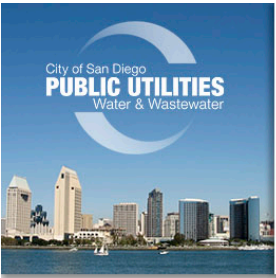
San Diego Tap Water Cost Comparison

Per Gallon Cost of Other Liquids (July 2014)

Milk	\$ 3.49
Coffee (AM/PM)	\$10.61
Soda (Coke)	\$ 3.99
Vended water	\$ 0.35
Gallon of store brand water	\$ 1.09
Gallon of name brand water	\$ 1.49
San Diego tap water*	\$ 0.008 delivered



*2015 average water bill divided by average household water use (\$71.05/8,976 gals)



Benefits of Option C

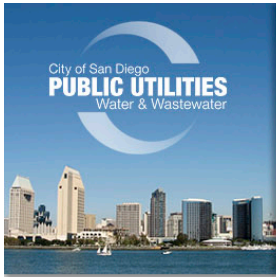
- Meets all regulatory requirements
- Provides a local, sustainable drought-proof supply of high-quality drinking water for San Diego
- Reduces ocean discharges and sets a cap on mass emissions from the Point Loma Wastewater Treatment Plant
- Is the most cost-effective option










Schedule

Date	Meeting
October 2, 2014	Metro JPA
October 7, 2014	City Council Closed Session
October 28, 2014	City Council Approval
January 30, 2015	Submit Permit Application
December 2015	Secondary Equivalency Approved



What Can I Do?

- Visit our website **Purewatersd.org**
-  Like us on Facebook **Pure Water San Diego**
-  Follow us on Twitter **@PureWaterSD**
- Watch us on  **Purewatersd**
- Register for tours **PureWaterSD.org/tours**
- Join our mailing list or sign a support card



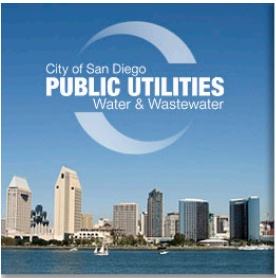
Please check all that apply:

☐ 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 • (619) 533-7572 • www.purewatersd.org



Questions?

