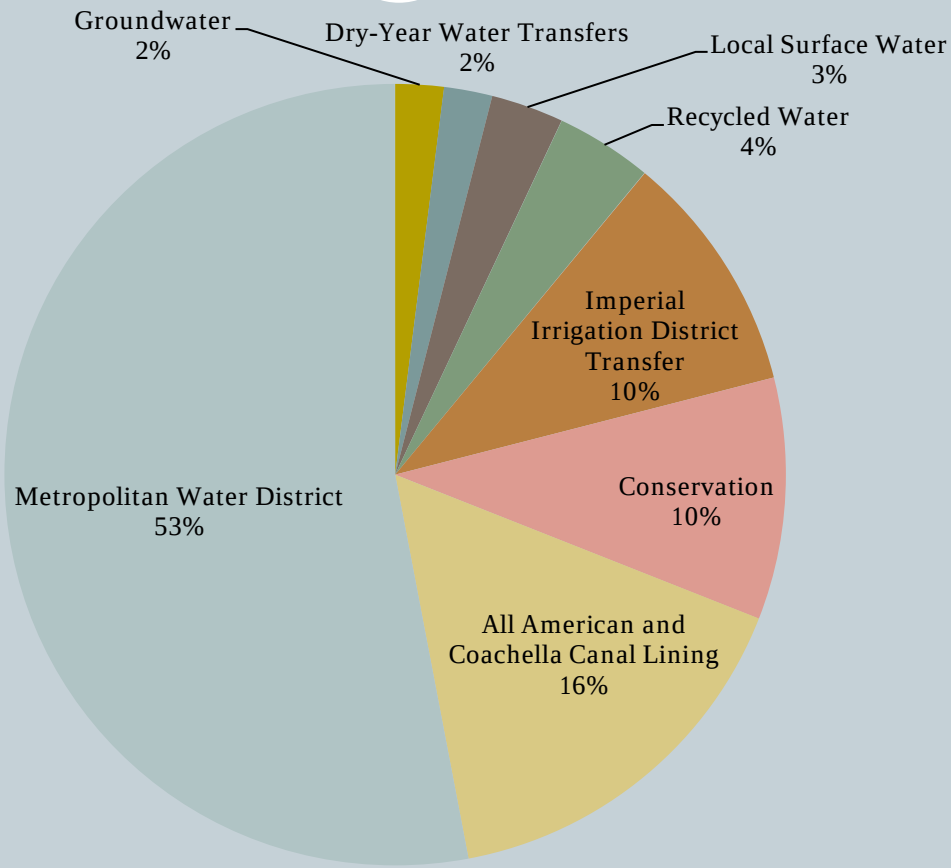
Testing the Waters

CITY OF SAN DIEGO'S INDIRECT POTABLE REUSE AND RESERVOIR AUGMENTATION DEMONSTRATION PROJECT

San Diego County Taxpayers Association

City of San Diego's Water Sources



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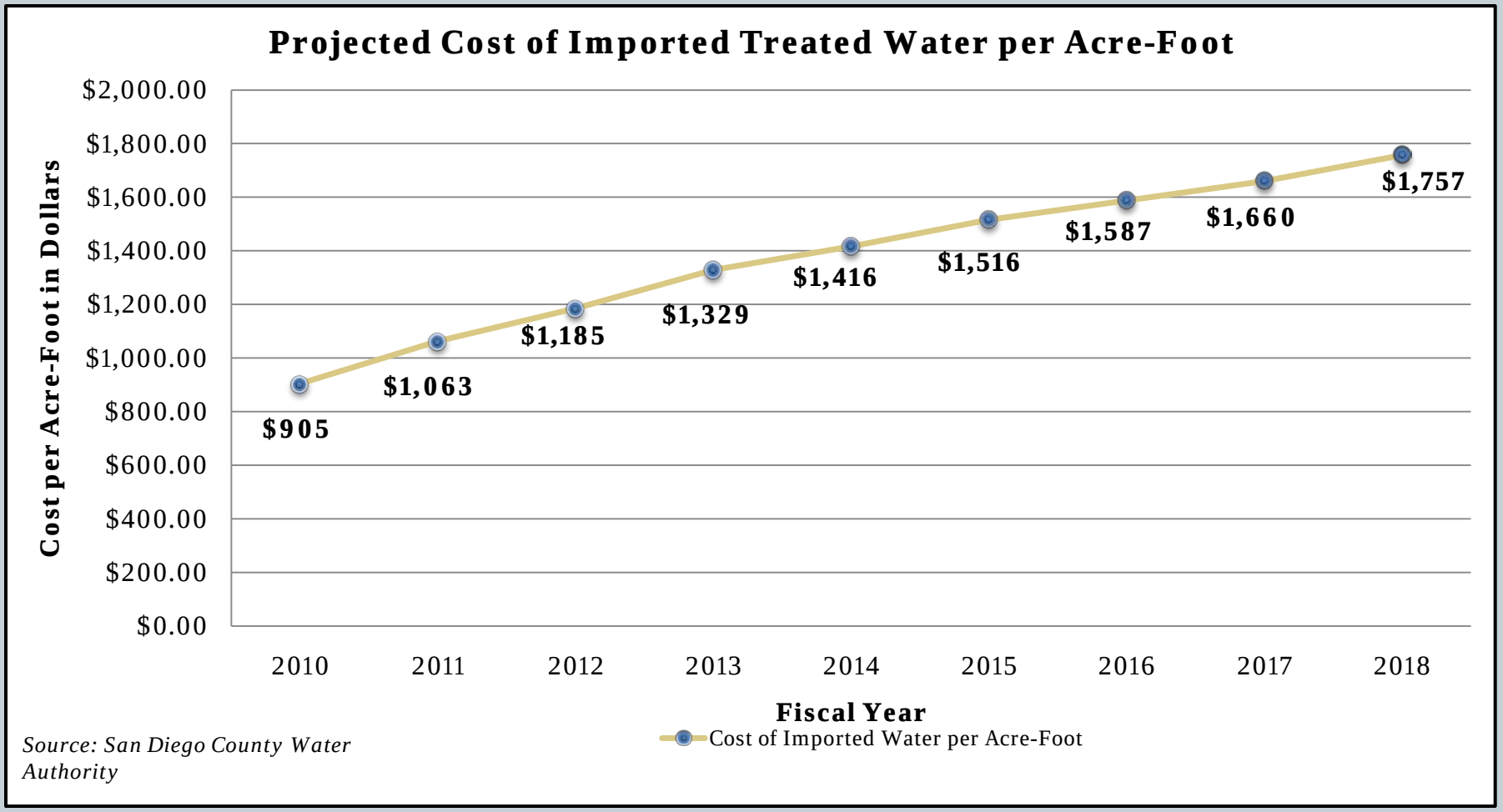
Source: San Diego County Water Authority

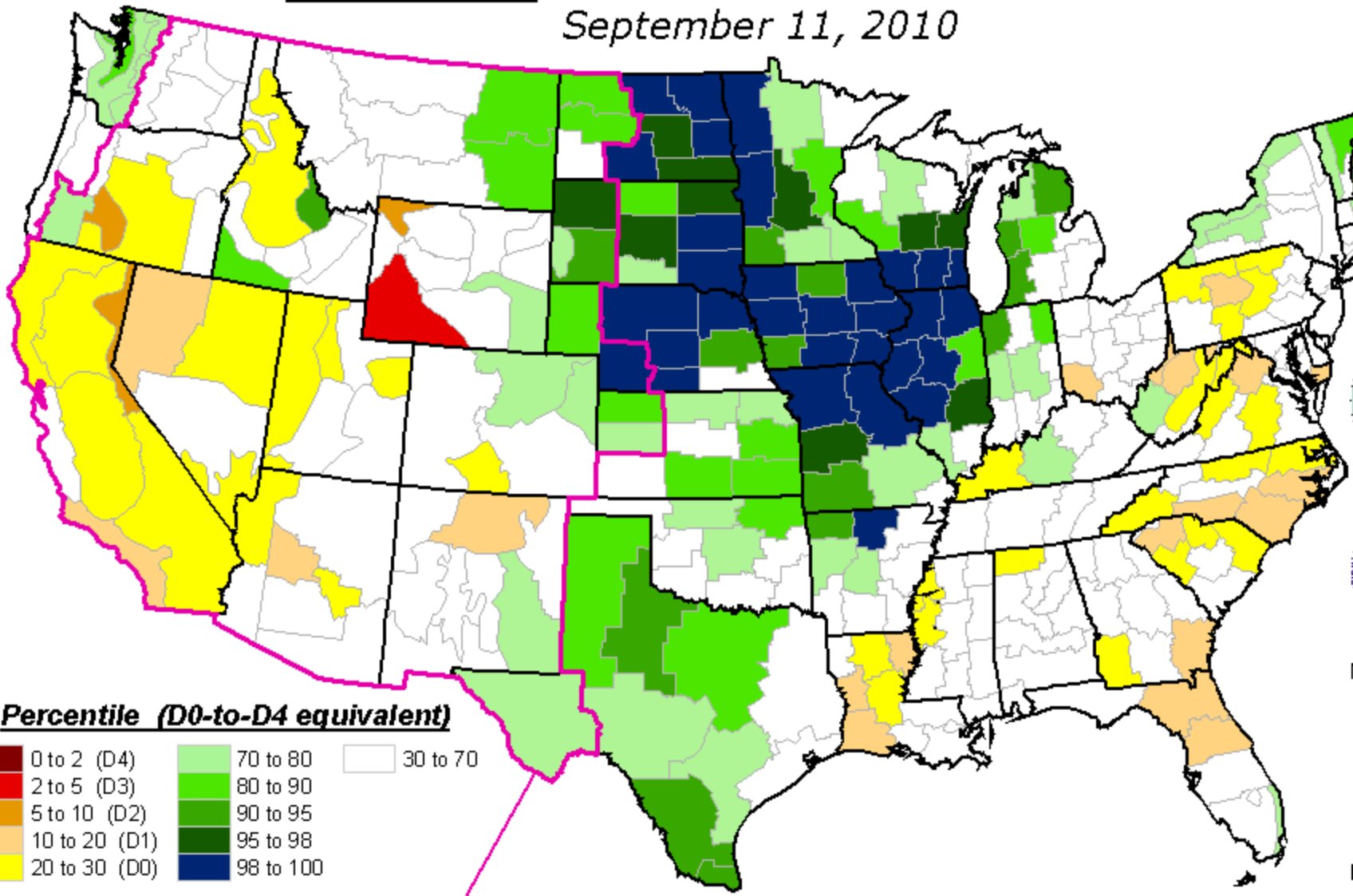
Cost of Imported Water to Nearly Double by 2018



Source: San Diego County Water Authority

Objective Long-Term Drought Indicator Blend Percentiles

September 11, 2010



Percentile (D0-to-D4 equivalent)

0 to 2 (D4)	70 to 80	30 to 70
2 to 5 (D3)	80 to 90	
5 to 10 (D2)	90 to 95	
10 to 20 (D1)	95 to 98	
20 to 30 (D0)	98 to 100	

NWS / NCEP Climate Prediction Center

NESDIS National Climatic Data Center

Inputs (as percentiles):

25% Palmer Hydrologic Index
20% 24-Month Precipitation
20% 12-Month Precipitation
15% 6-Month Precipitation
10% 60-Month Precipitation
10% CPC Soil Moisture Model

Western Formulation Inputs (as percentiles):

30% Palmer Hydrologic Index
30% 60-Month Average Z-Index
10% 60-Month Precipitation
10% 24-Month Precipitation
10% 12-Month Precipitation
10% CPC Soil Moisture Model

This map approximates impacts responding to precipitation over the course of several months to a few years, such as reservoir content, groundwater, and lake levels. HOWEVER, THE RELATIONSHIP BETWEEN INDICATORS AND WATER SUPPLIES CAN VARY MARKEDLY WITH LOCATION, SEASON, SOURCE, AND MANAGEMENT PRACTICE. Do not interpret this map too literally.

This map is based on preliminary climate division data. Local conditions and/or final data may differ. See the detailed product suite description for more details.

Water Supply Enhancement Opportunities

- Conservation
- Reuse (non-potable)
- Reuse (potable)
- Desalination
- Storage
- Transfers

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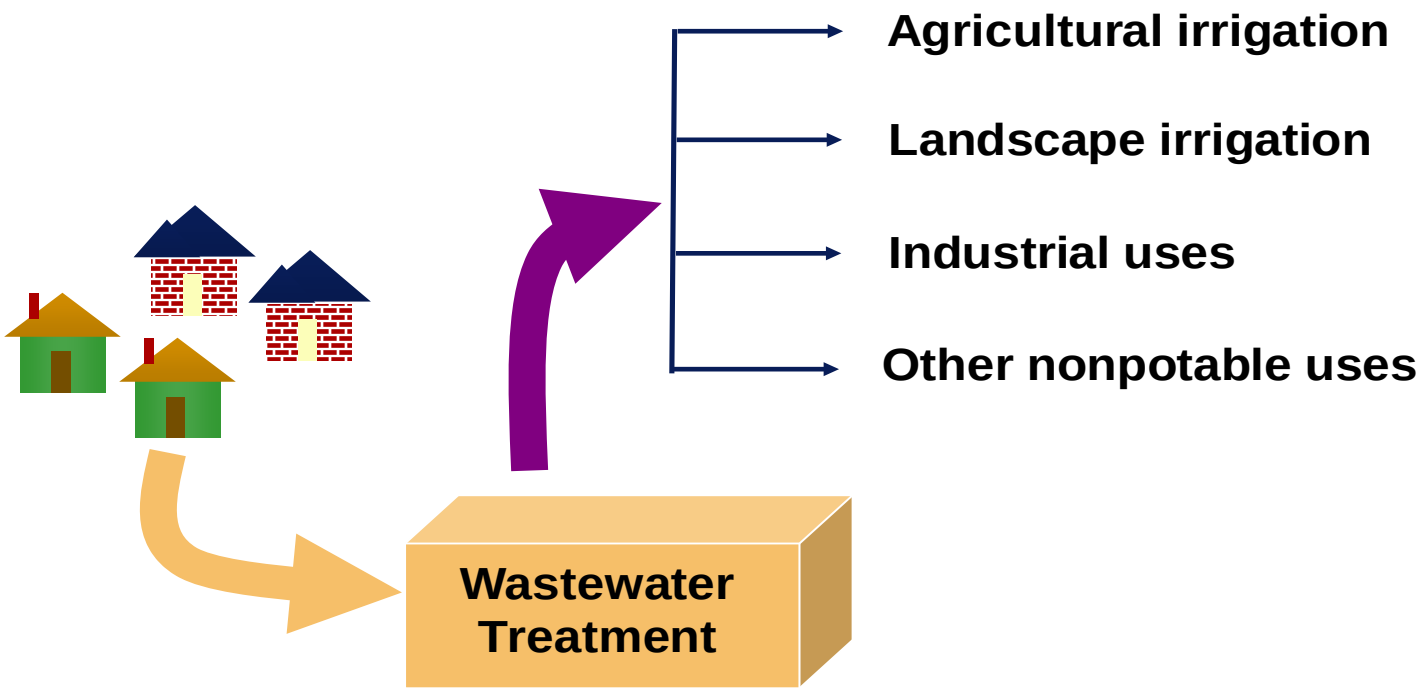
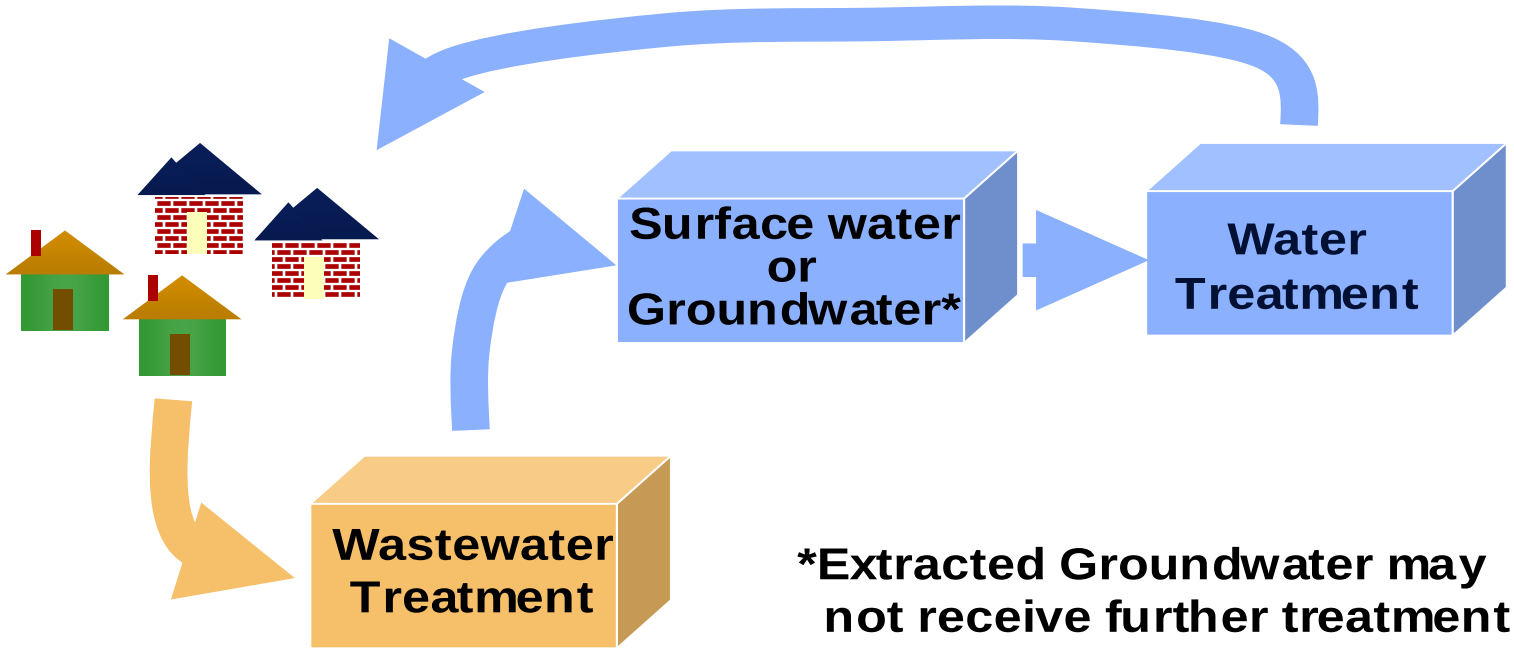
Conservation Garden Conversion

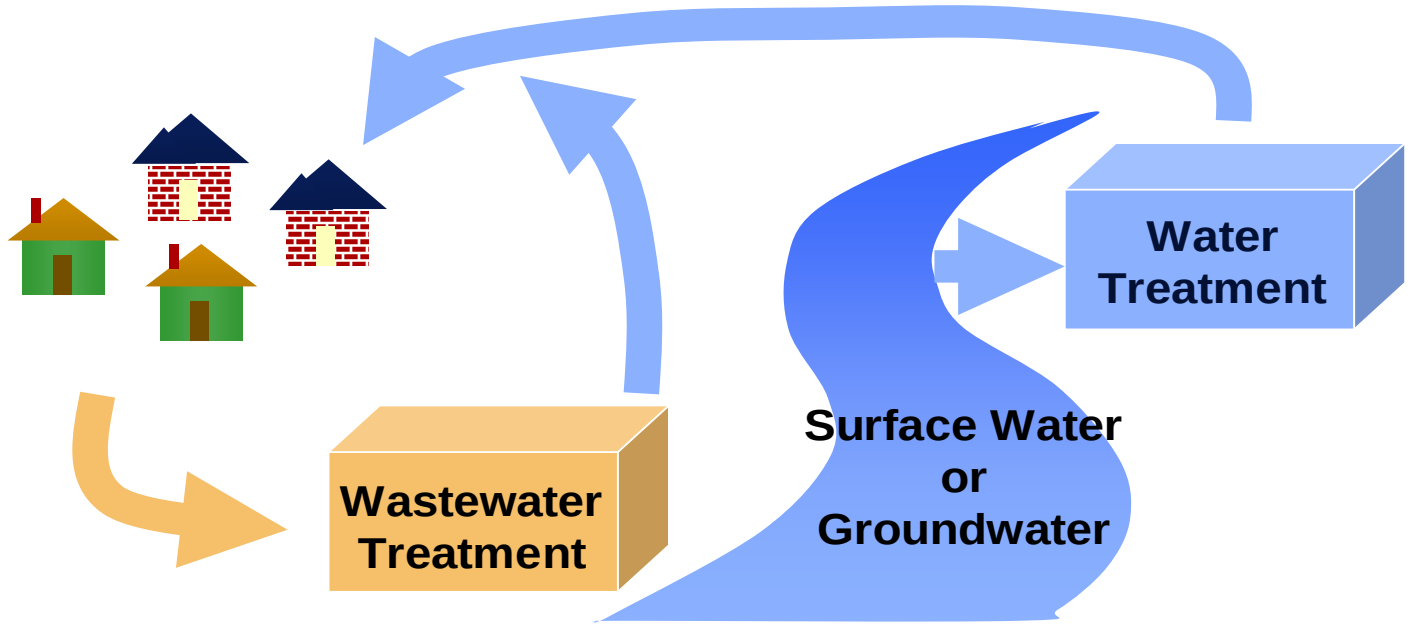
Short/Intermediate Term Response is Non-potable Reuse



Short/Intermediate Response is Indirect Potable Reuse



Long Term Response is Direct Potable Reuse



History of Advocacy
(the last 25 years)

Advocacy Groups can Address Non-Technical Barriers to Indirect Potable Water Reuse

- Public/user perception and cultural issues – “Toilet to Tap Syndrome”
- Better documentation of economics of water reuse
- Support by local authorities/policy makers
- Project funding

New Players Advocating for Reuse

1984	
Surfriders	Protect Oceans

1985	
Heal the Bay	Stop discharge into Bay

1990	
WateReuse Association	Promote reuse

New Players Advocating for Reuse

1991	
NWRI	Promote Water Supply

1992	
Bureau of Reclamation	Fund Reuse (Title XVI)

1999	
Coastkeeper Alliance	Promote Healthy Coast

San Diego Water Reliability Coalition

Unprecedented alliance of environmental, business, technical, labor, economic growth and taxpayer advocacy groups advocating to promote the use of indirect potable reuse for the San Diego region.

Friends of Infrastructure

- BIOCOM
- Building Industry Association
- Building Owners and Managers Association San Diego Chapter
- Citizens Coordinate for Century 3
- Coastal Environmental Rights Foundation
- Endangered Habitats League
- Environmental Health Coalition
- Empower San Diego
- Friends of Infrastructure
- Industrial Environmental Association
- National Association of Industrial and Office Properties San Diego Chapter
- San Diego and Imperial Counties Labor Council
- San Diego Audubon Society
- San Diego Coastkeeper
- San Diego County Taxpayers Association
- San Diego Regional Chamber of Commerce
- San Diego Regional Economic Development Corporation
- San Diego River Parks Foundation
- Surfrider Foundation, San Diego Chapter
- Sustainability Alliance of Southern California
- Utility Consumers' Action Network

Water Reliability Coalition Beliefs about IPR

- Provides a locally controlled, drought-proof water supply
- Enhances supply reliability by diversifying supply sources, reducing the city's reliance and vulnerability to outside sources
- Enhances regional sustainability by limiting water diversions from other California ecosystems
- Decreases wastewater discharges
- Takes advantage of the city's sunk costs in treating wastewater

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Hesitation

- “The project is a colossal waste of ratepayer dollars and, just as important, fraught with serious public health concerns.”

  - San Diego Union-Tribune Editorial, 9/08/2008

- "I'll oppose any effort to bring about toilet-to-tap. There is neither the money nor the public will to support such a program.“

- San Diego Mayor Jerry Sanders, 9/13/2007

Public Perception: From Wary to Winning

- When surveyed in 2005, 28 percent of respondents favored advanced treated recycled wastewater as an addition to the supply of drinking water
- According to a public opinion poll commissioned by the San Diego County Water Authority in April 2009, over 63 percent of respondents favored such use of recycled water
- Likewise, a survey conducted by the San Diego Institute for Policy Research in September 2007 demonstrates that after being presented with facts about IPR the public is much more inclined to support it

San Diego County Taxpayers Association

A Change in Perception

- “I support the pilot project. My concern has been and will always be that that water is safe. We're still concerned about the pharmaceutical uses, but I'm certainly not going to quibble with scientists and demagogue this issue. I think that there is some work to be done and I think that we need to find out how it's diluted and how that works in a reservoir system. I think that's important.”
- San Diego Mayor Jerry Sanders, voiceofsandiego.org, 2/09/2010

Council Hearings Then and Now

- Council has major hesitation: http://granicus.sandiego.gov/MediaPlayer.php?view_id=3&clip_id=2393

(00:52:30 – 00:53:33)

- Council demonstrates broad support: http://granicus.sandiego.gov/MediaPlayer.php?view_id=3&clip_id=4213

(02:52:40 – 02:53:57)

- Council approved the final contract to design, build and operate the demonstration facility on July 27, 2010

Additional Information

- The following slides offer additional information about San Diego's Indirect Potable Reuse Demonstration Project.

2006 City of San Diego Water Reuse Study

- Reviewed 3 Options for the North County Water Reclamation Plant and 3 for South Bay Water Reclamation Plant
  - Non-potable and indirect potable reuse
- Looked at cost, feasibility, reliability, public health and environmental factors
- Concluded that:
  - Indirect Potable Reuse is best strategy to create a new, sustainable, high quality water owned by the City
  - Science and technology are protective of the public's health
  - Maximizes public benefit and long term costs
  - Public perceptions must be addressed

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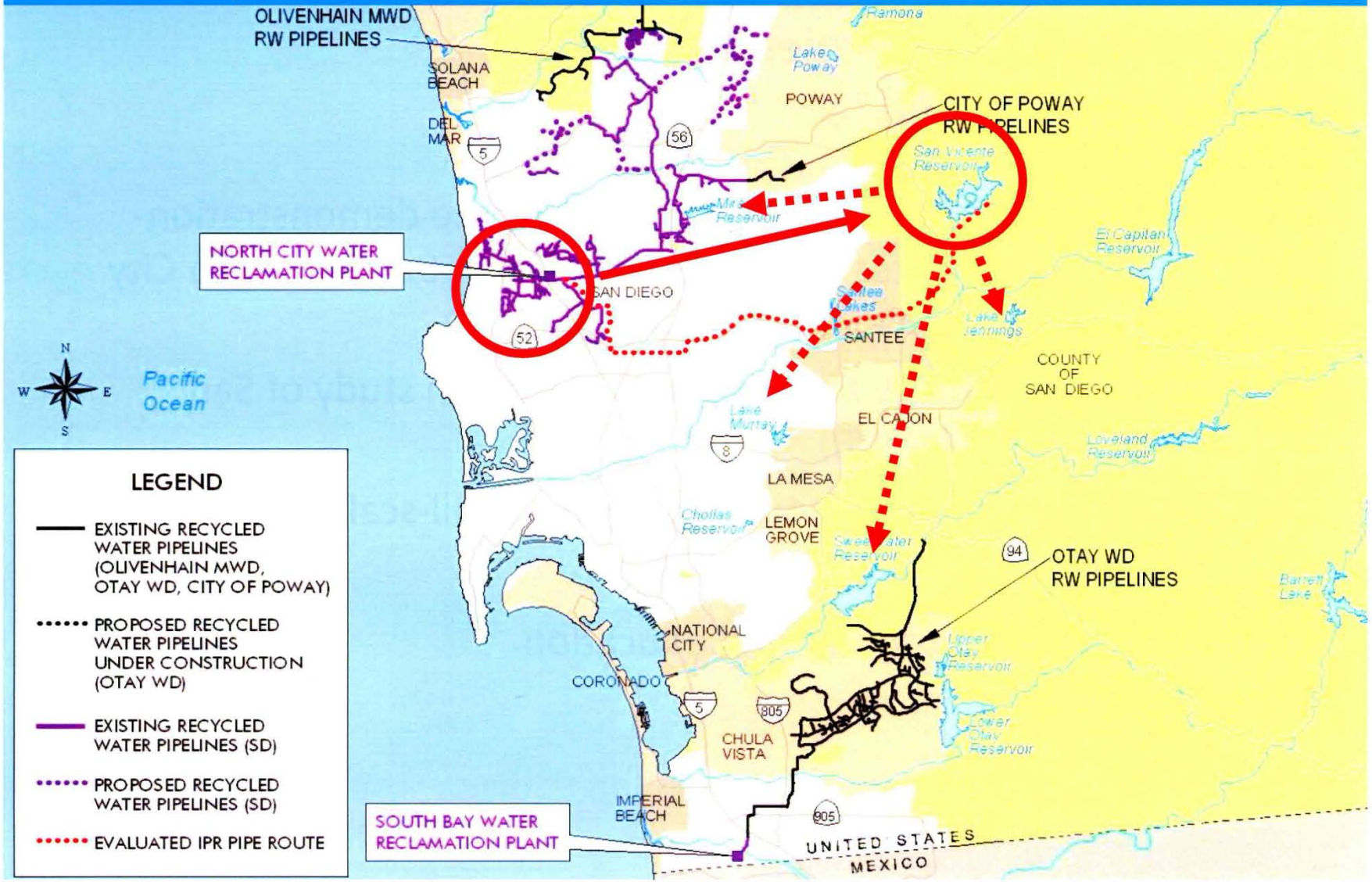
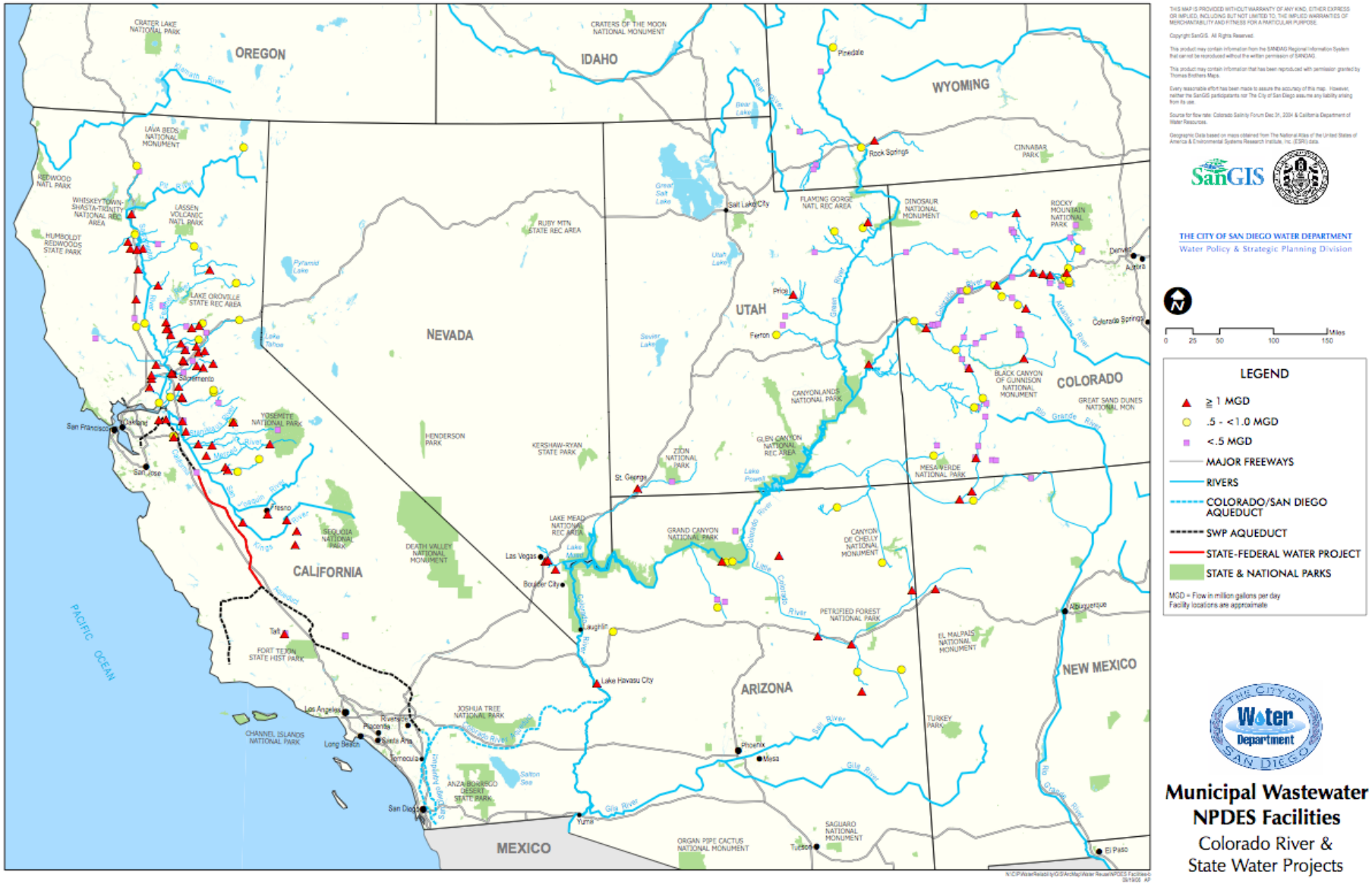
Project Concept



Demo Project Goals and Description

- In November 2008, the City Council approved a temporary water rate increase to fund the project, which has a total cost of $11.8 million
- These rate increases have been in effect since January 1, 2009
- Goals:
  - Design, procure, install, operate and test the demonstration-scale advanced water treatment plant at the North City Water Reclamation Plant
  - Conduct a limnology (fresh water properties) and reservoir detention study of San Vicente Reservoir
  - Define the regulatory requirements for a full-scale project
  - Perform pipeline alignment study
  - Conduct public outreach and education

Wastewater Discharges into San Diego's Water Supply



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Source for flow rate: Colorado Salinity Forum Dec 31, 2004 & California Department of Water Resources.

Geographic Data based on maps obtained from The National Atlas of the United States of America & Environmental Systems Research Institute, Inc. (ESRI) data.

SanGIS

THE CITY OF SAN DIEGO WATER DEPARTMENT
Water Policy & Strategic Planning Division

Municipal Wastewater NPDES Facilities

Colorado River & State Water Projects

Benefits to Wastewater Treatment Process

- Reduces the amount, and therefore the cost, of wastewater that has to be treated
- Justifies the third waiver that Point Loma Wastewater Treatment Plant has received for upgrading its facilities
- Less wastewater = less environmental damage to our oceans

Examples of Successful IPR Projects

IPR has already been tested with significant epidemiological studies done on the population:

- Fairfax, VA (1978) - supplies 5% of water for Fairfax
- El Paso, TX (1985) – supplies 40% of water for El Paso
- Scottsdale, AZ (1998)
- O.C. Groundwater Replenishment (70 MGD, 500k population)
- Proposed Los Angeles groundwater recharge
- International projects (Singapore – 4.3M population)

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