# West Basin
# Municipal Water District

Mission: To provide a safe and reliable supply of high quality water to the communities we serve

# Background

- Formed by a vote of the people in 1947, joined Metropolitan Water District (MWD) in 1948 to bring in imported water
- Water wholesaler – imported/recycled
  - Imported N. CA and Colorado River
- Brought water reliability to coastal LA
- Serves 17 coastal LA cities, 1 million people with imported and recycled water in 185 square mile service area
- Provide about 220,000 acre-feet of water each year, enough to fill the Rose Bowl 850 times
- Industry leader in recycling, conservation, education & more recently ocean desalination

850 Rose Bowls
of water a year

# West Basin Leadership





- Five person Board of elected Directors:
  - Division I Ronald C. (Ron) Smith
  - Division II Gloria D. Gray
  - Division III Carol W. Kwan
  - Division IV Edward C. Little
  - Division V Donald L. Dear, current President
- Elected to four year term by the people

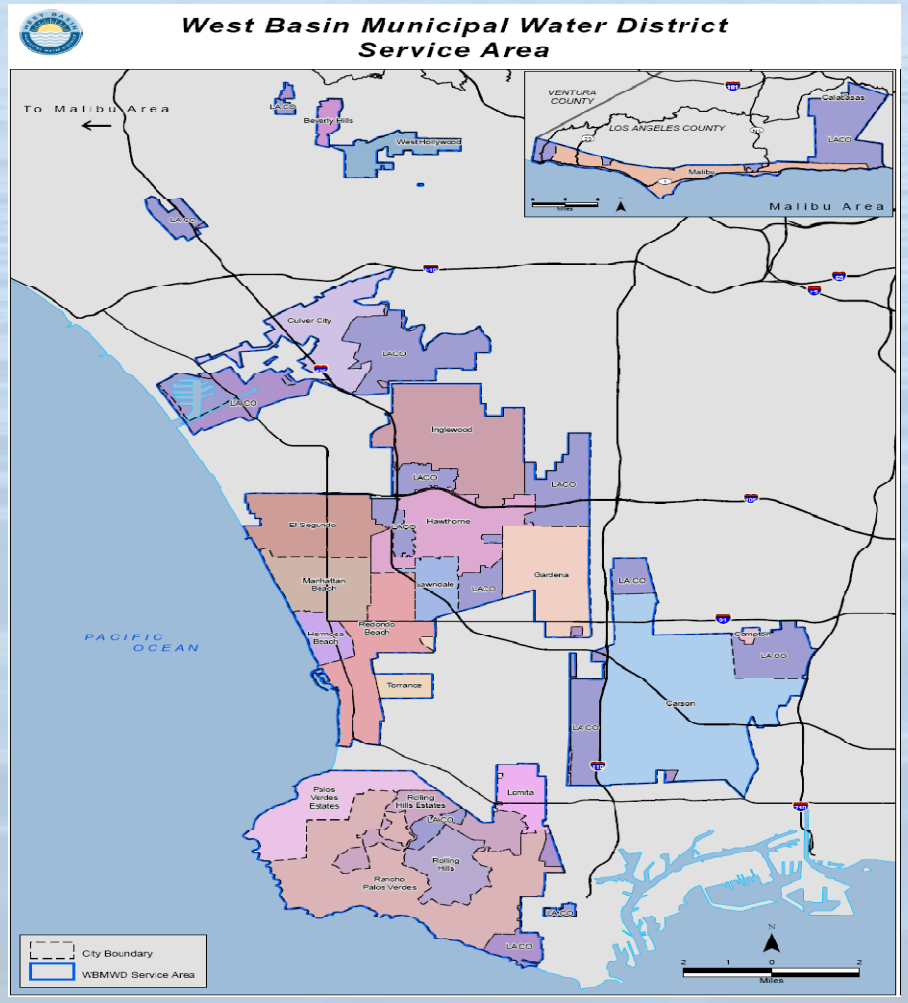
# Direct Customers

- City of El Segundo
- City of Inglewood
- City of Lomita
- City of Manhattan Beach
- Los Angeles County Water Works 29
- California American Water Company
- California Water Service Company
- Golden State Water Company

- Also provide recycled water outside our service area to: City of Torrance, City of Los Angeles and Water Replenishment District

WRD
WATER REPLENISHMENT DISTRICT
OF SOUTHERN CALIFORNIA

# 17 Cities & Unincorporated Areas Served




- Div. I - Carson, Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills Estates, Rolling Hills & San Pedro.
- Div II- Inglewood, South Ladera Heights, Lennox, Athens, Howard & Ross-Sexton
- Div III - Hermosa Beach, Lomita, Manhattan Beach, Redondo Beach & Torrance
- Div IV - Culver City, El Segundo, Malibu, West Hollywood, Lennox, North Ladera Heights, Del Aire, Topanga, View Park & Windsor Hills
- Div V - Gardena

# Our Commitments to Customer & Communities

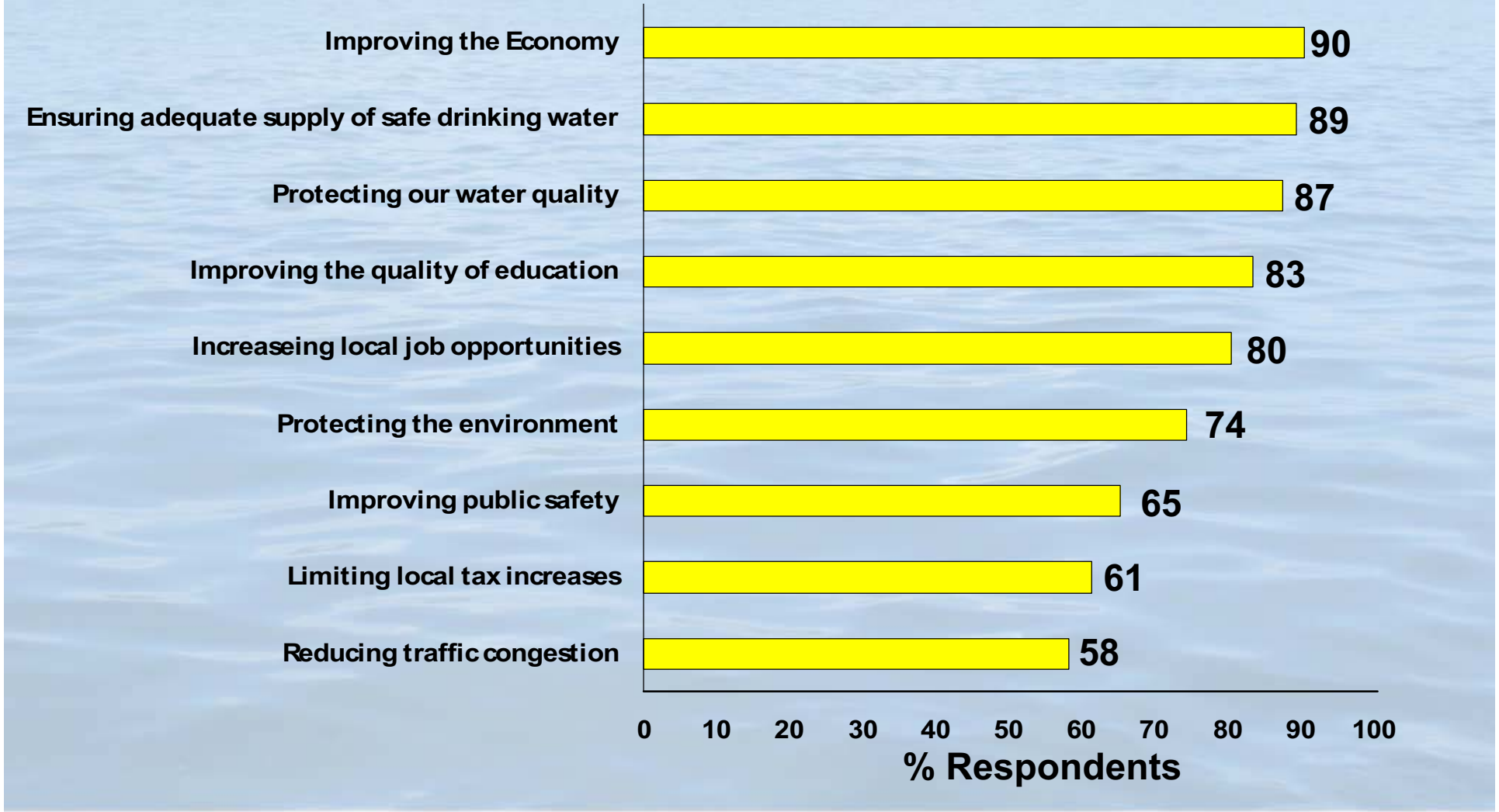
- **Water Reliability** – West Basin is committed to innovative planning and investments to provide water supply reliability and drought protection.
- **Water Quality** – West Basin is committed to providing safe, high quality water by meeting current and anticipated water quality requirements.
- **Sound Financial and Resource Management** – West Basin is committed to efficient business operations, financial planning and asset management.
- **Customer Service** – West Basin is committed to providing value by understanding and meeting the needs of our customers and the communities we serve
- **Environmental Stewardship**– West Basin is committed to sustainable and environmentally-friendly business practices.

# Public Support & Perception

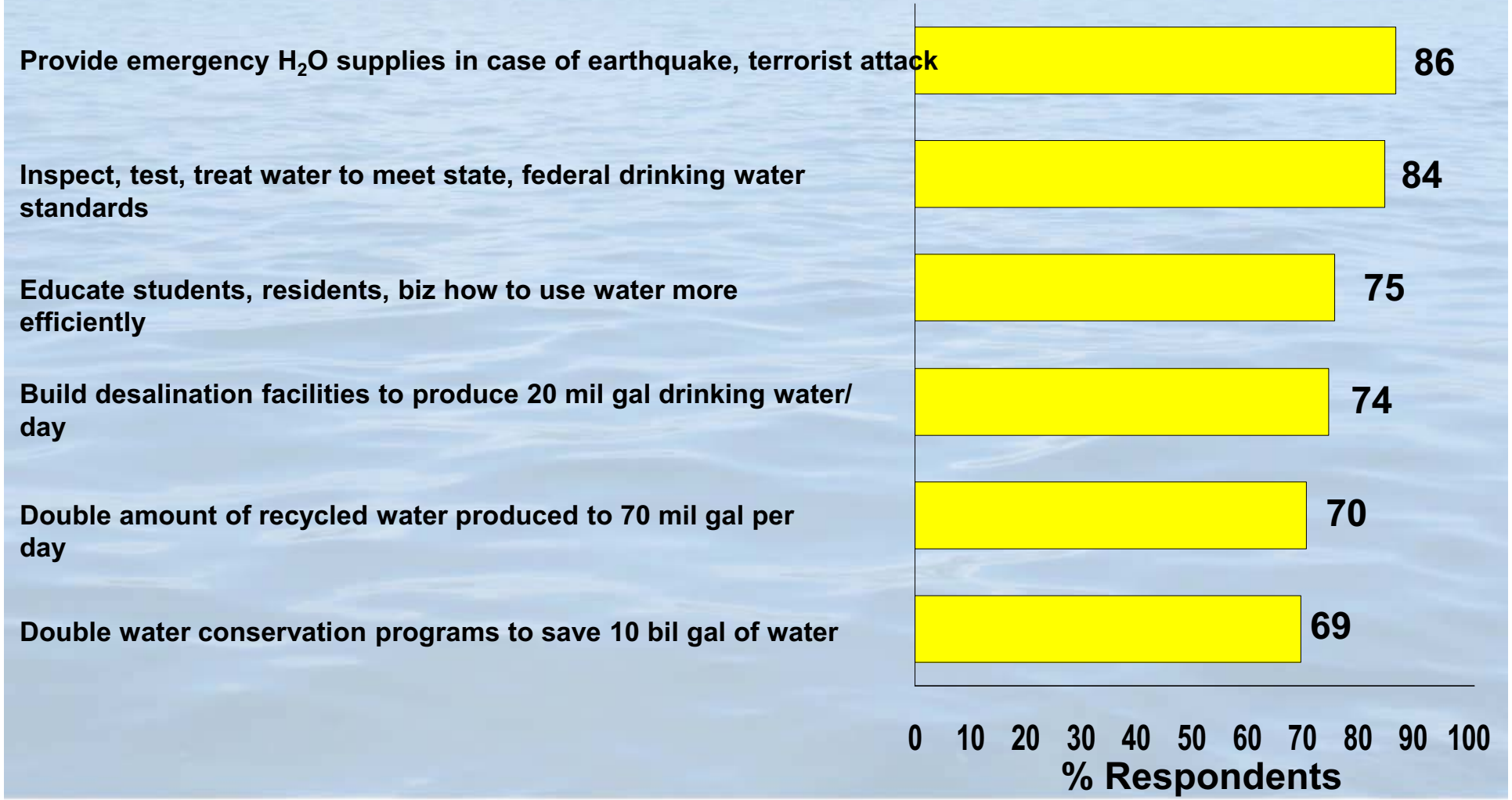
**Conducted 3 Poll Surveys:**

| Year | Support for Desal |
|---|---|
| 2002 | 70% |
| 2008 | 75% |
| 2009 | 74% |

# Importance of Issues



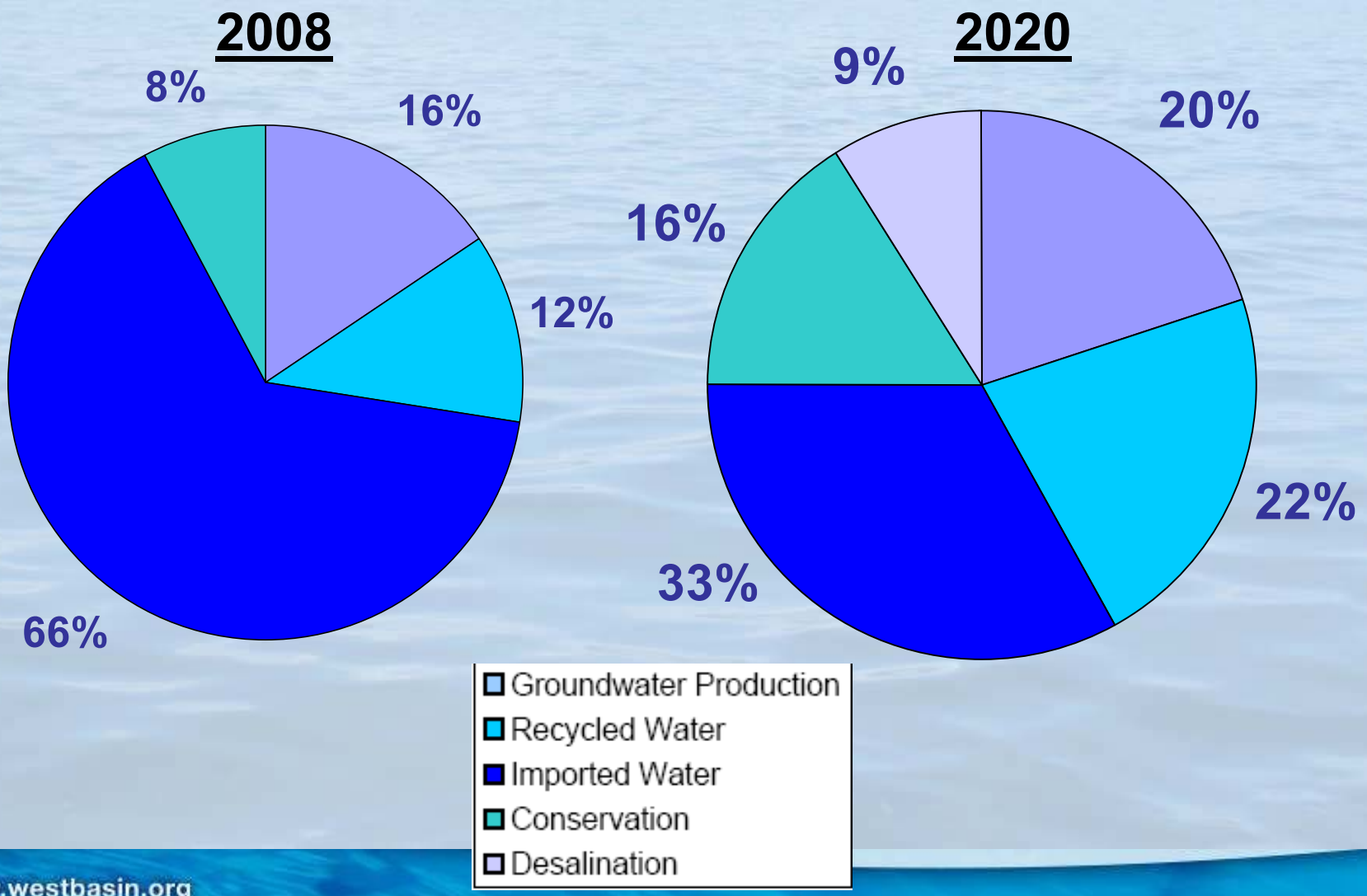
# Projects & Services



# Commitment to Water Reliability

## Water Reliability 2020 Plan

# Water Reliability Portfolio

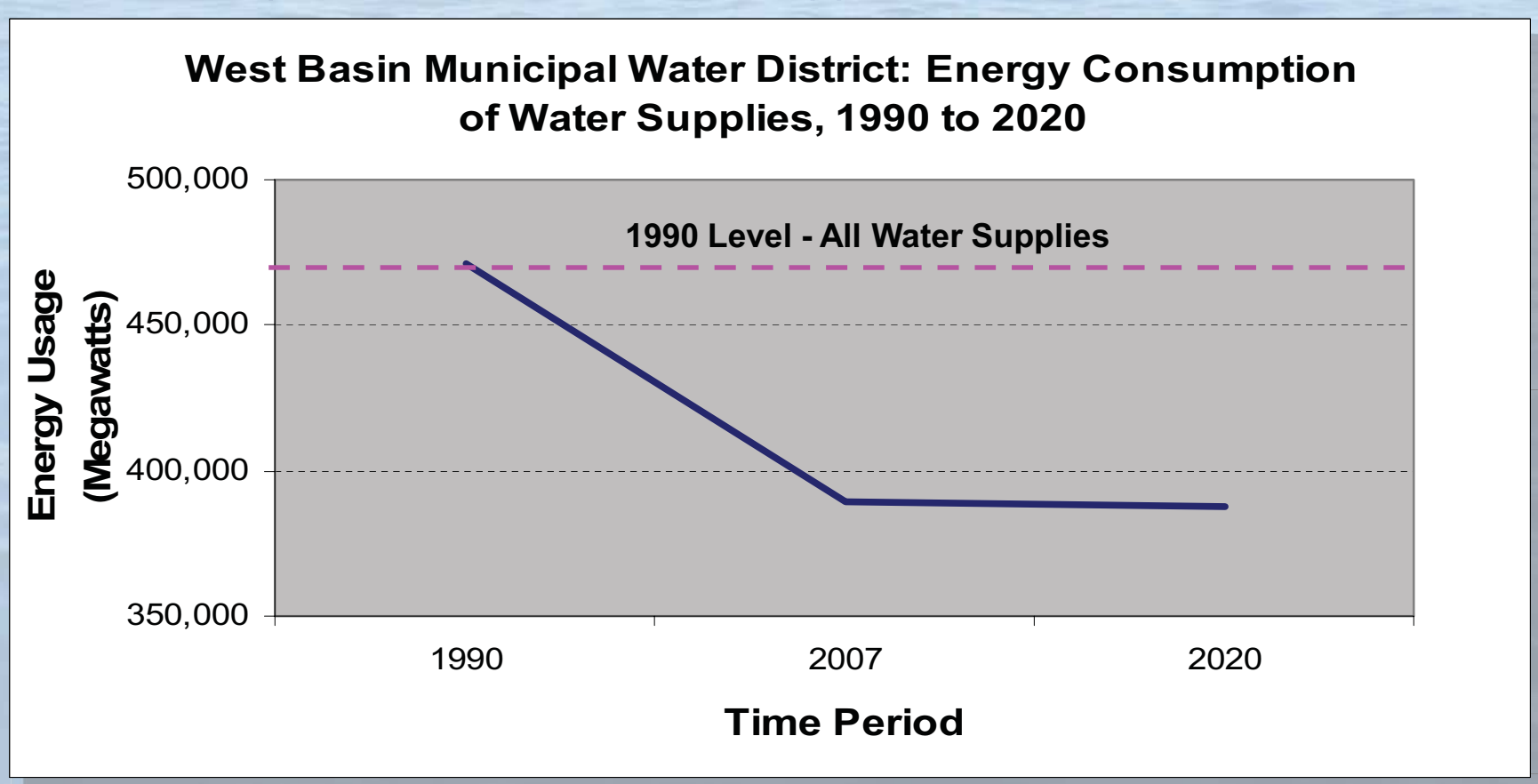


# Commitment to Water Reliability 2020

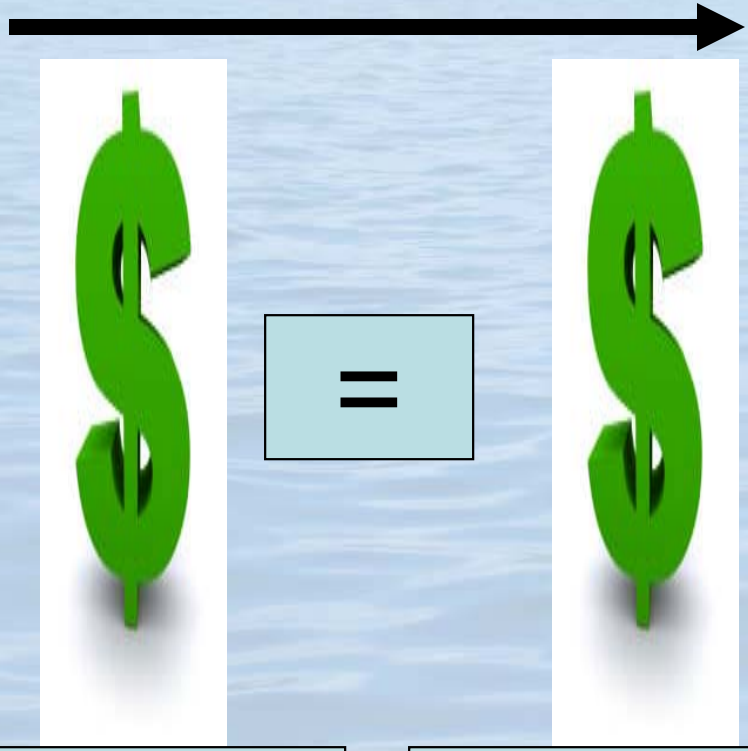
- What every Southern California Water Agency Should be doing
- **Water Reliability 2020 Plan**
  - Recycling 30 to 70 MGD
  - Conserve 5 billion to 10 billon gallons
  - Increase education
  - 20 MGD ocean water desalination

# WR 2020 Energy Savings

We will actually save energy as we come of imported water onto local supplies



# Cost of Water Reliability

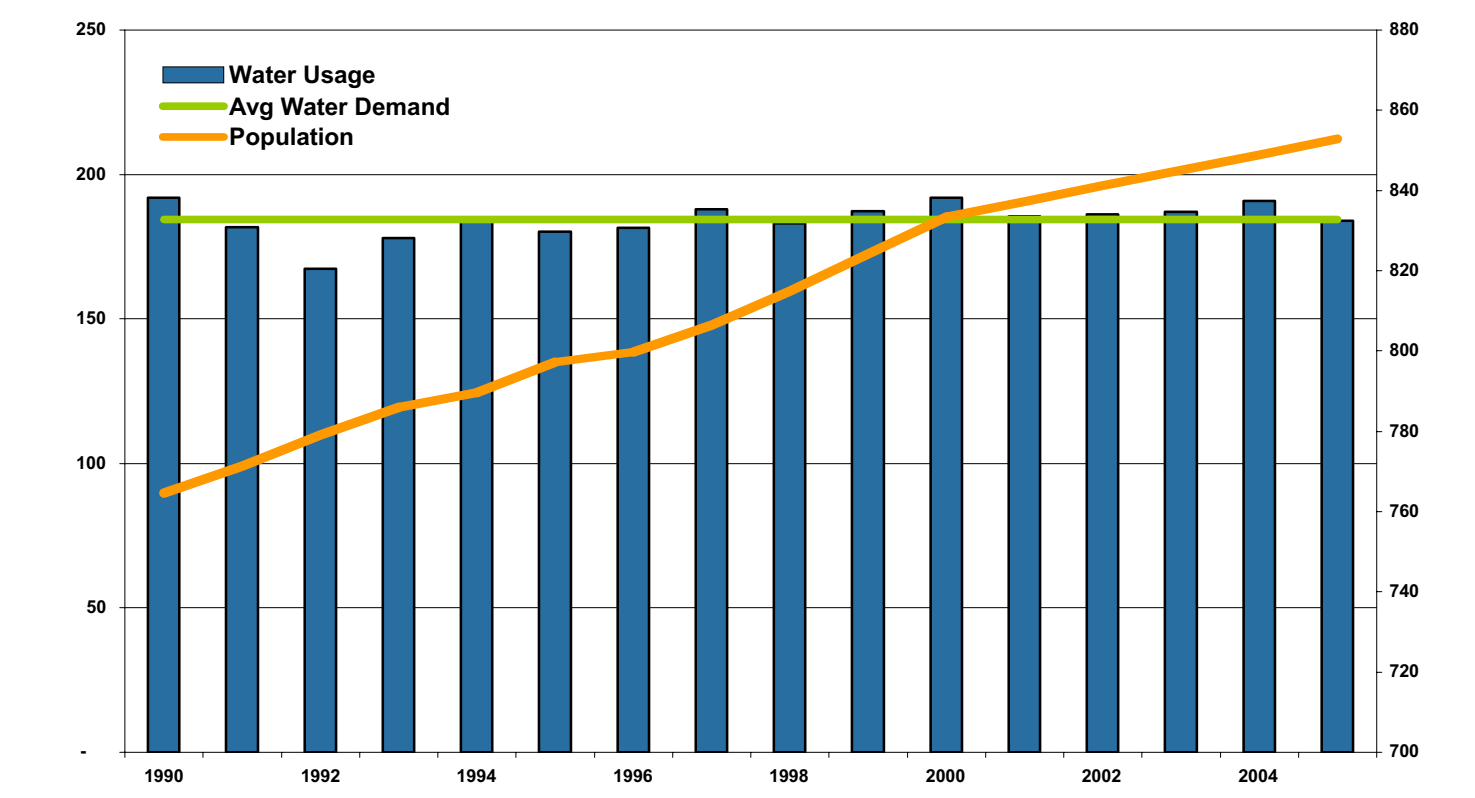



Continue importing less reliable water

Locally control more of our water

- Water Reliability 2020 will cost same as importing less reliable water
- But will improve sustainability, local-control and reliability of future water
- For our children & grandchildren

# Impact of Recycling and Conservation




1990-2005 increased population 100,000, but kept water use level due to power of conservation

# Water Recycling

- Expanded Edward C. Little Water Treatment Plant 4X – only plant to make five "designer" waters
- $500 million investment since 1994, but contained costs with $87 million in grants,
- Saves industrial customers 30% on water that will not be cut back

# Current RW Production

- 40,000 acre-feet per year of water is not discharged into the ocean,
- Instead it is recycled and used to save enough potable water for 240,000 people, and
- Goal is to produce 70,000 acre-feet per year of recycled water by 2020 to provide 3 years of drought protection for our area.

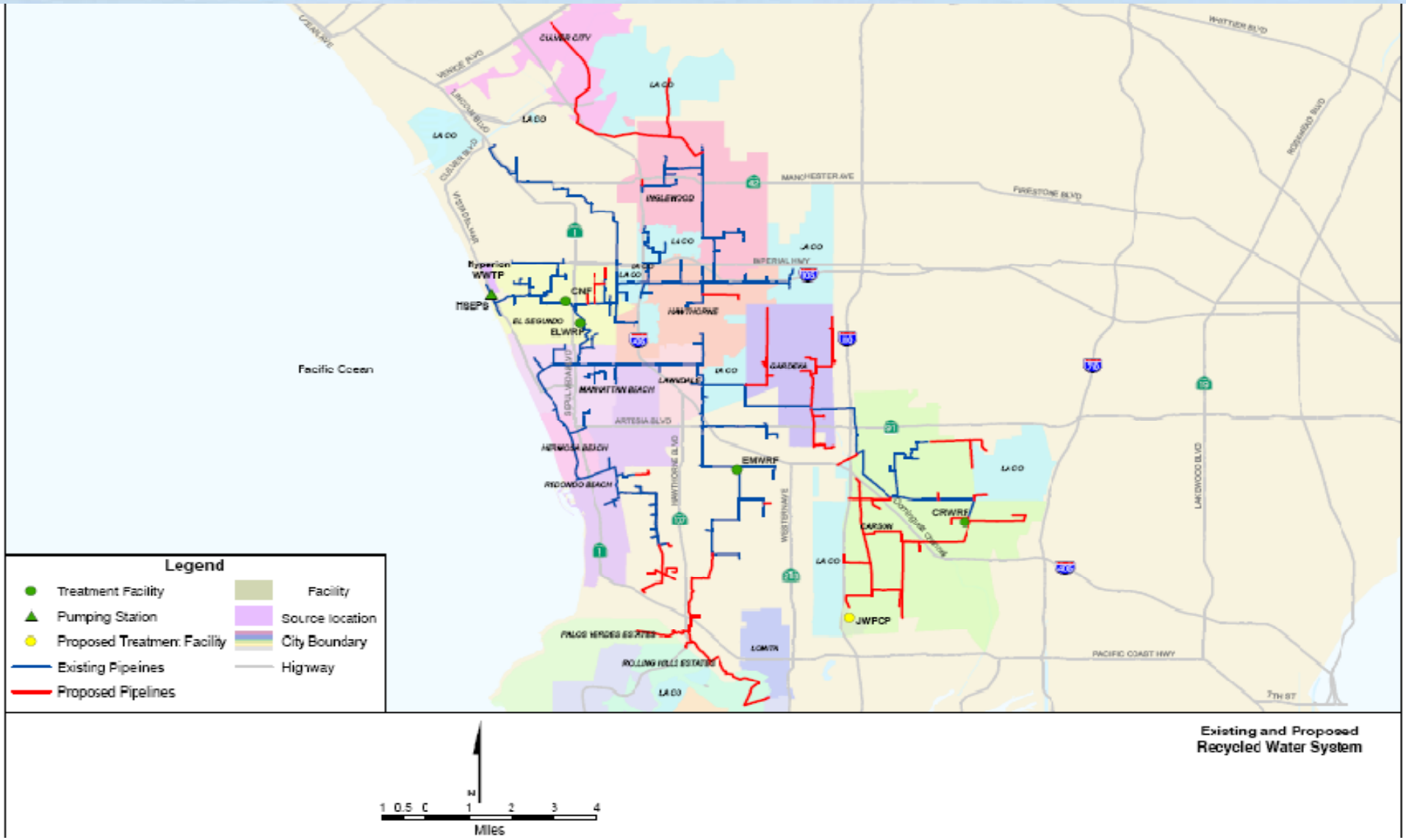
# Designer Recycled Water

- 5 different qualities
- Nitrified: Cooling Tower
- Tertiary: Irrigation
- Softened RO: Seawater Barrier / GW Injection
- Single RO: Low-Pressure Boiler Feed
- Double RO: High-Pressure Boiler Feed

# Water Recycling

- Serve several refineries
  - Takes .82 gallons water to make gallon of gas
  - Huge water savings by servicing refineries
  - Goal is to expand refinery service
- Also expanding water to seawater barrier in the future from 75% to 100%
- Use solar power at recycling plant
  - Reduces CO2 emissions 365 tons a year, equal to 100 acres of forest
  - Takes off 10% of peak power
  - Solar planned for demo and full scale plants

# Distribution System



# Recent Developments


- **Sixth Quality:**
  - **Home Depot National Training Center -** Amended Tertiary for Sports Turf
- **LA Harbor Area Master Plan**
  - Serve City of Los Angeles with up to 10 mgd of various recycled water qualities
- **Expanded Use by Existing Customers**
  - West Coast Barrier
  - BP Refinery
  - Chevron Refinery

# Types of Recycled Water Users


Inglewood only city in U.S. to use recycled water for street sweeping

Toyota USA uses recycled water for toilet flushing, cooling towers and irrigation

50% of the total water used in entire El Segundo is recycled water from WBMWD

# Ocean Water Desalination – Nothing New

- Desalination has been practiced on ocean going ships since the 16th century
- Currently done in 130 countries and right off the coast here on Catalina

# Pilot Project Ocean Water Desalination

- Completed a 6 year Successful Pilot Project study
  - Microfiltration
  - Reverse Osmosis
- Starting demonstration project to find best way to take water out of ocean

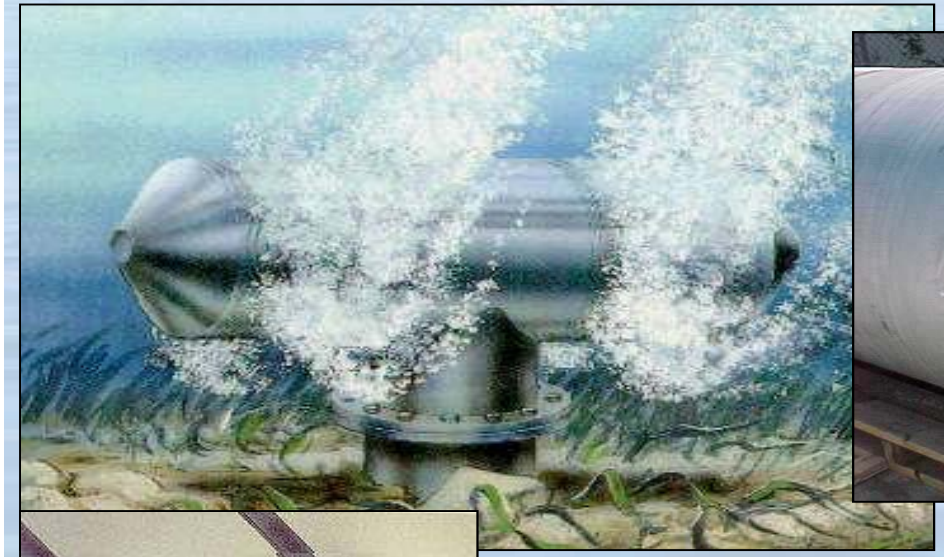
# Desalination Program History

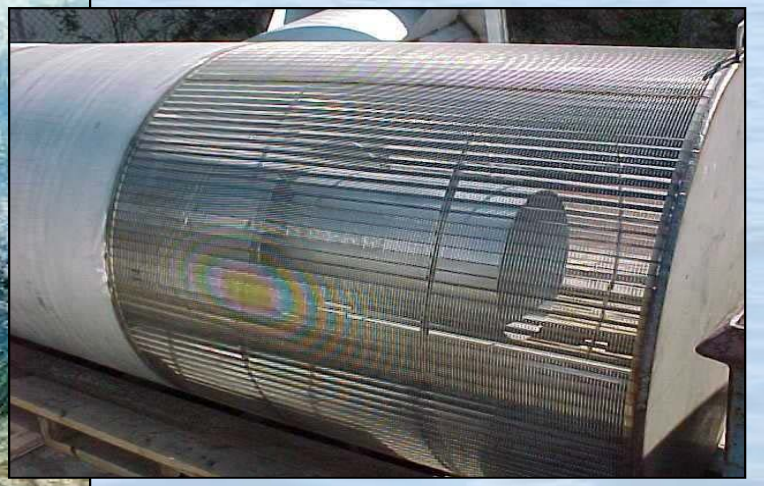
- Successful **small scale pilot project** in El Segundo
- State of California is providing $1.7 million for next phase
- SEA Lab facility in Redondo Beach offers unique opportunity for **temporary demonstration facility**
- Approx. 580,000 gallons per day of ocean water

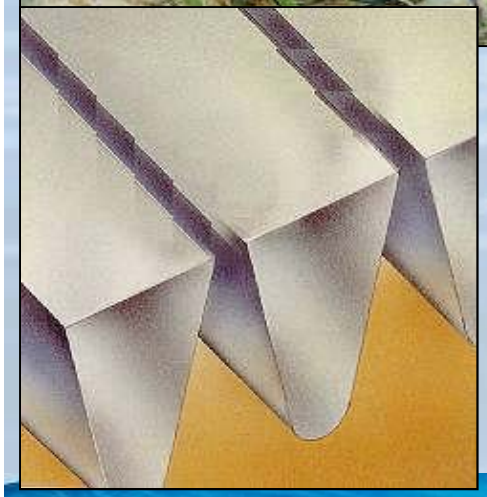
# Demonstration Project Site

# Desalination Project Location

# Demonstration Project- Intake Approach

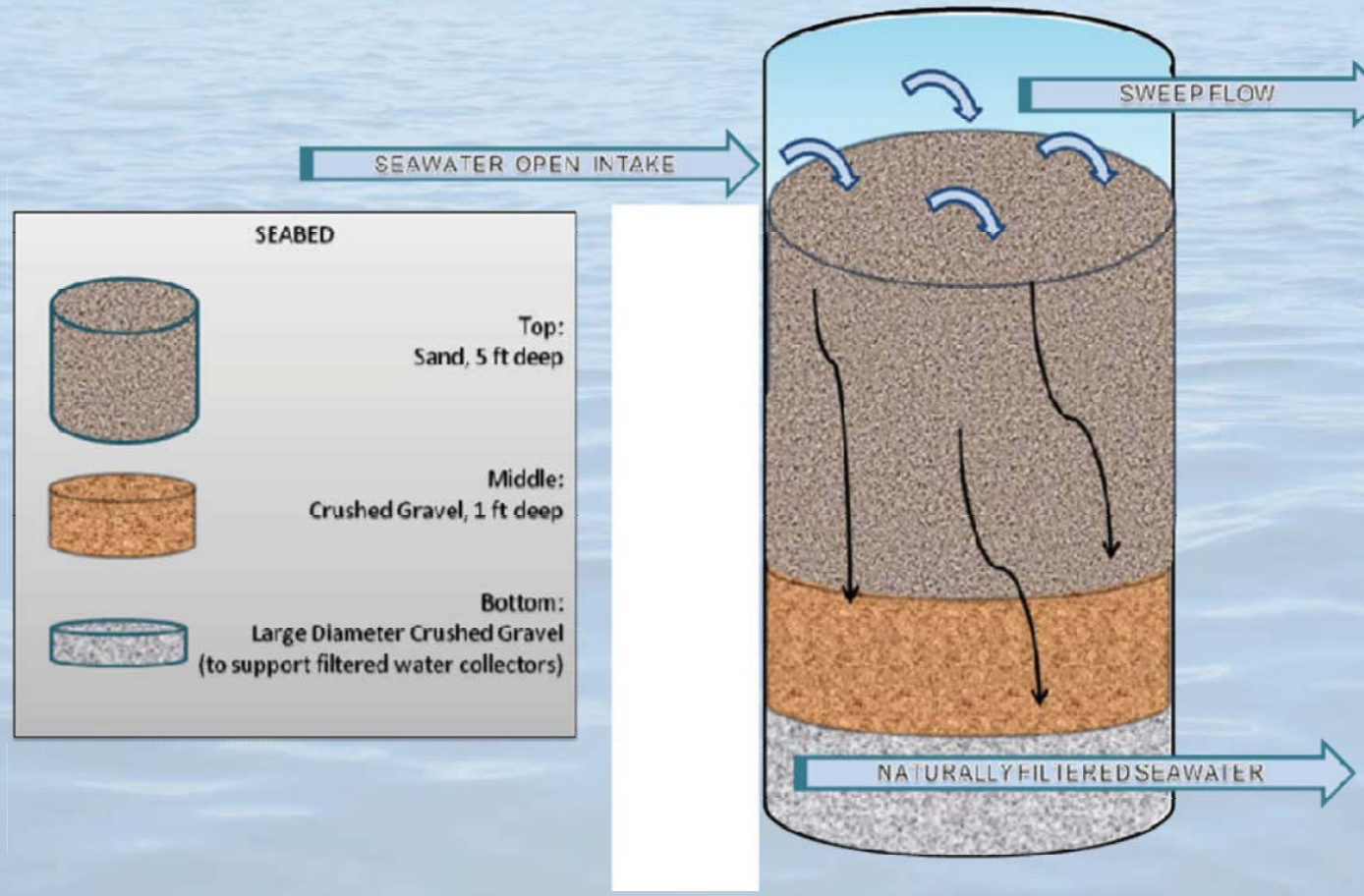






**Passive**
**Wedgewire Screen**

# Seabed Infiltration Pilot



# Demonstration Plant Schedule

- Regulatory Agency Permit Applications
- Draft EIR public review ends 12/5/08
- Prepare Responses to Comments/Final EIR
- Final EIR hearing 12/22/08, 1 PM
- **Regulatory Permit Approvals – March/June**
- Construction – begin late 2009 (1 year)
- Operation – begin late 2010 (2 to 3.5 years)
- Decommissioning – 6 months

# Demonstration Project Summary

- **Intake**
  - Approx. 580,000 gallons per day of ocean water
  - Utilize existing AES intake/outlet tunnels
  - Intake Technologies to be Tested:
    1) Passive Wedge-Wire Screen Technology
    2) Seabed Infiltration System Pilot
- **Site Structures**
  - SEA Lab Pump House – renovated, for educational displays
  - South Yard Equipment Area – screening canopy
  - Intake Pump Station
- **AES Parking/Staging Area**
- **Construction/Operation/Decommissioning**

# Conservation

- Due to partnering and grants, West Basin receives 400% return on investment on its conservation programs
- West Basin has many programs
- WB's Conservation Master Plan will guide our water savings from current 5 billion gallons to 10 billion gallons

# Doubling Water Conservation

- Conservation is less expensive than existing water supplies – about $300 AF less
- Have programs where industries can save up to $295,000 through water savings and incentives
- Saves electricity – 2,500 kWh/acre foot over importing water

# Commitment to Water Quality

- West Basin owns state-certified water quality laboratory to monitor water quality to ensure it meets or is better than standards
    - Yearly, 25,000 water quality tests are conducted on WB's recycled water for safety
    - Monthly perform 5,000 water quality tests on our pilot ocean water desalination project
- We administer a water quality testing program for some area groundwater users
- We use an panel of outside, independent water quality experts to ensure our water quality
- WB's recycling plant can produce water so pure that it has to be transported in special plastic pipes – it would destroy regular water pipes!
- WB's recycling plant produces seawater instruction barrier water (MF,RO, UV) (indirect drinking water) so pure that minerals have to added to the water in order to move it

# Education – Also Expanding as Part of WR 2020

- Award winning water conservation & environmental e programs
- Serve 3rd through 12th grades
- Meets California standards
- Free buses for tours!
- Education programs:
  - Field trips & education centered around Water Recycling plant
  - Environmental partners - Roundhouse Aquarium, LA Consv. Corps SEA Lab
  - Science Fairs
  - Water Is Life art contest
  - Solar Cup Boat Races
  - 5- $1,000 scholarships
  - Waterwise Kits $10,000 grant to implement for customers

We believe educating future water users about water i investment in future water savings

# Funding Needed

- To reach 2020 goals requires $900 Million for desalination, conservation and recycled water projects
- The demands are greater than the funding available
- Grant funding is needed to help fund these projects

# Questions?