

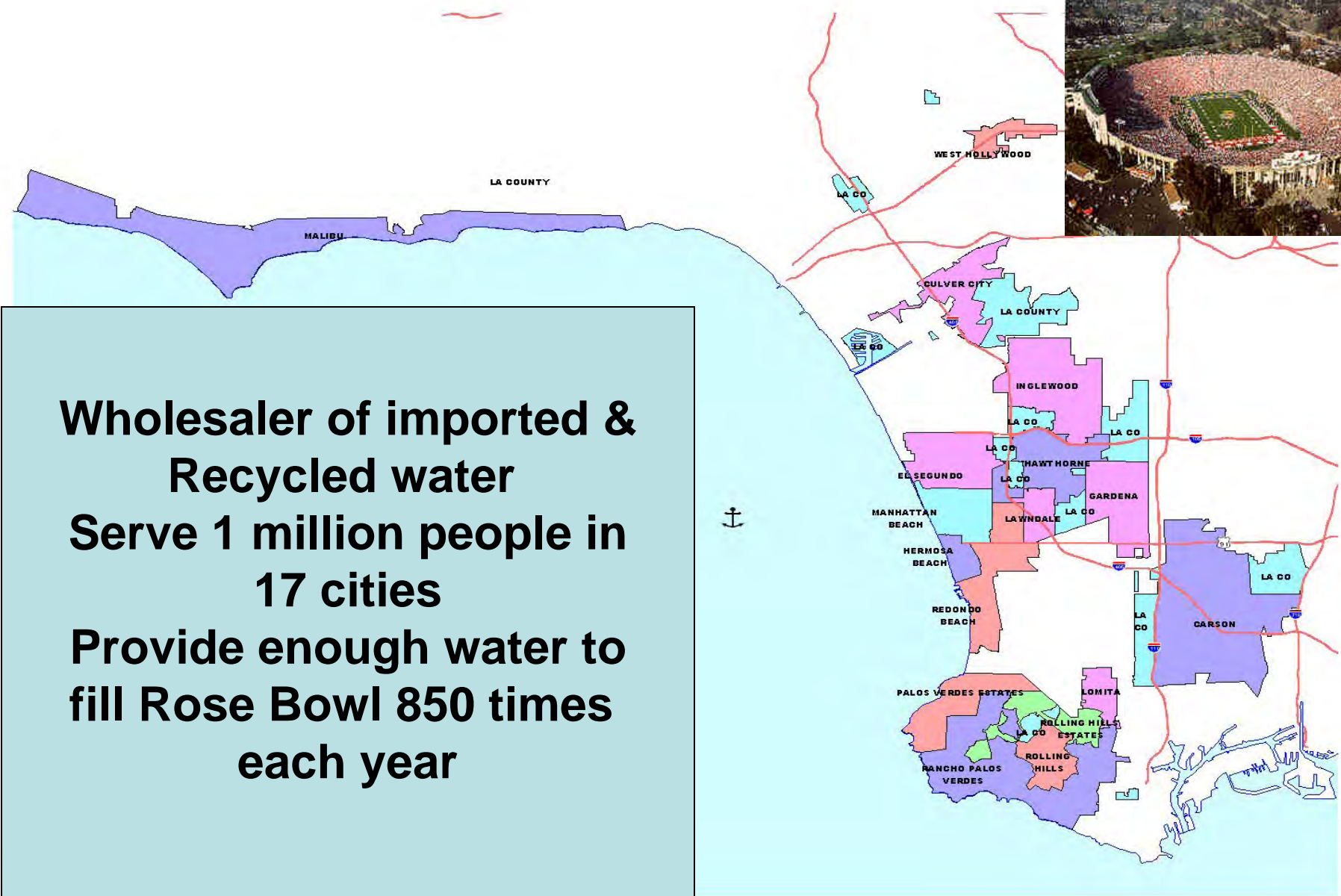
Water Reliability 2020

Recycling, Conservation & Ocean Desalination



West Basin Municipal Water District
www.westbasin.org

Who is West Basin MWD?



**Wholesaler of imported &
Recycled water
Serve 1 million people in
17 cities
Provide enough water to
fill Rose Bowl 850 times
each year**

West Basin Leadership



- Strong, visionary 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
- Director Little is the current President



Water Reliability 2020

Water Reliability 2020



LOCAL CONTROL

1990



LOCAL CONTROL

Today



LOCAL CONTROL

2020

•Want to take local control of our water future and make it more reliable!

Water Reliability 2020

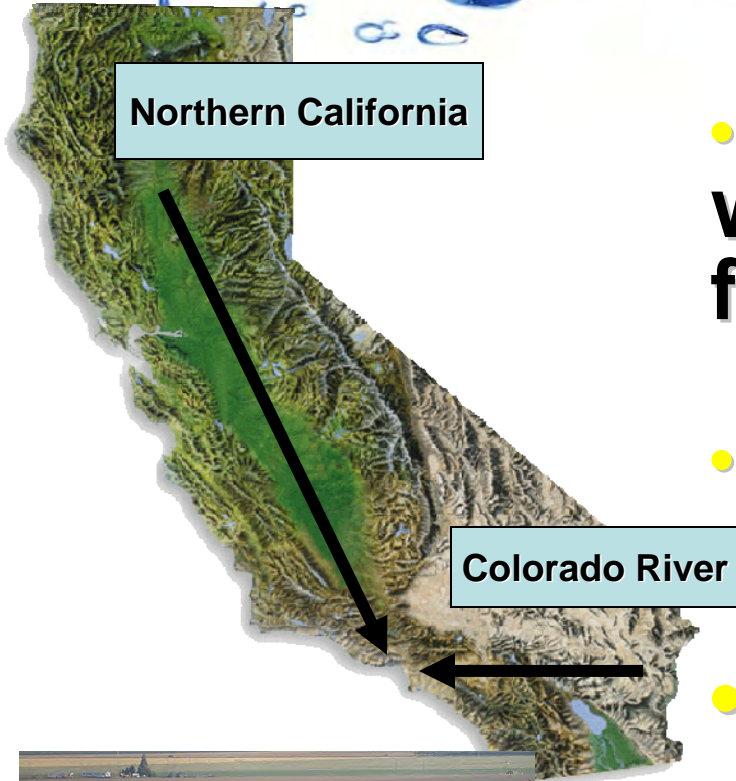


66%
**LOCAL
CONTROL**

2020

- How?
 - **Maximize/Double water recycling**
 - **Maximize/Double conservation**
 - **More water education**
 - **Start 20 million gallons of ocean water desalination (10%) future water**

Where Does Our Water Come From?



- **Today, we cannot exist without imported water from:**

- **Northern California &**

- **Colorado River**

- **Live in Disneyland?**



THE WHY! Long Term Imported Water Problems!

- Calif. system out of date: designed for 18, serving 37 million – needs huge investment: Bay Delta water hub broken
- Earthquake in Delta interrupt water for up to 2 years!
 - \$16-40 Billion dollar hit on the economy depending
 - Delta conveyance may take years
- With Delta fix, only stabilize not increase water South
- Global warming
 - Impact both N. CA snow pack & Colorado River basin
 - Results in heavier rains & longer droughts
- Population growth continues
- Colorado River already stressed and must continue to serve fastest growing areas
- We have all characteristics to have future water problems



**Met
Deserves
Great credit!**





Water Reliability 2020

Water is a 'ticking time bomb' for California



- **Ken Salazar – Secretary of the Interior**
- **Los Angeles Times**
- **March 22, 2010**



- **California water is a “ticking time bomb” in speaking of the Bay Delta and a possible earthquake!!!!**

Sponsored by West Basin Municipal Water District



Many Benefits!



66%
LOCAL
CONTROL

2020

- Water for sustainable cities
- Prevent future rationing
- Drought protection
- Emergency “wet” supply
- Water for economy
- Reduced energy use
- Goal is cost same as importing water
- Helps importer of water to Socal (MWD)
- Water for environment – SF/SJ Bay Delta
- Hopefully helps farmers & food

Maximizing Recycling



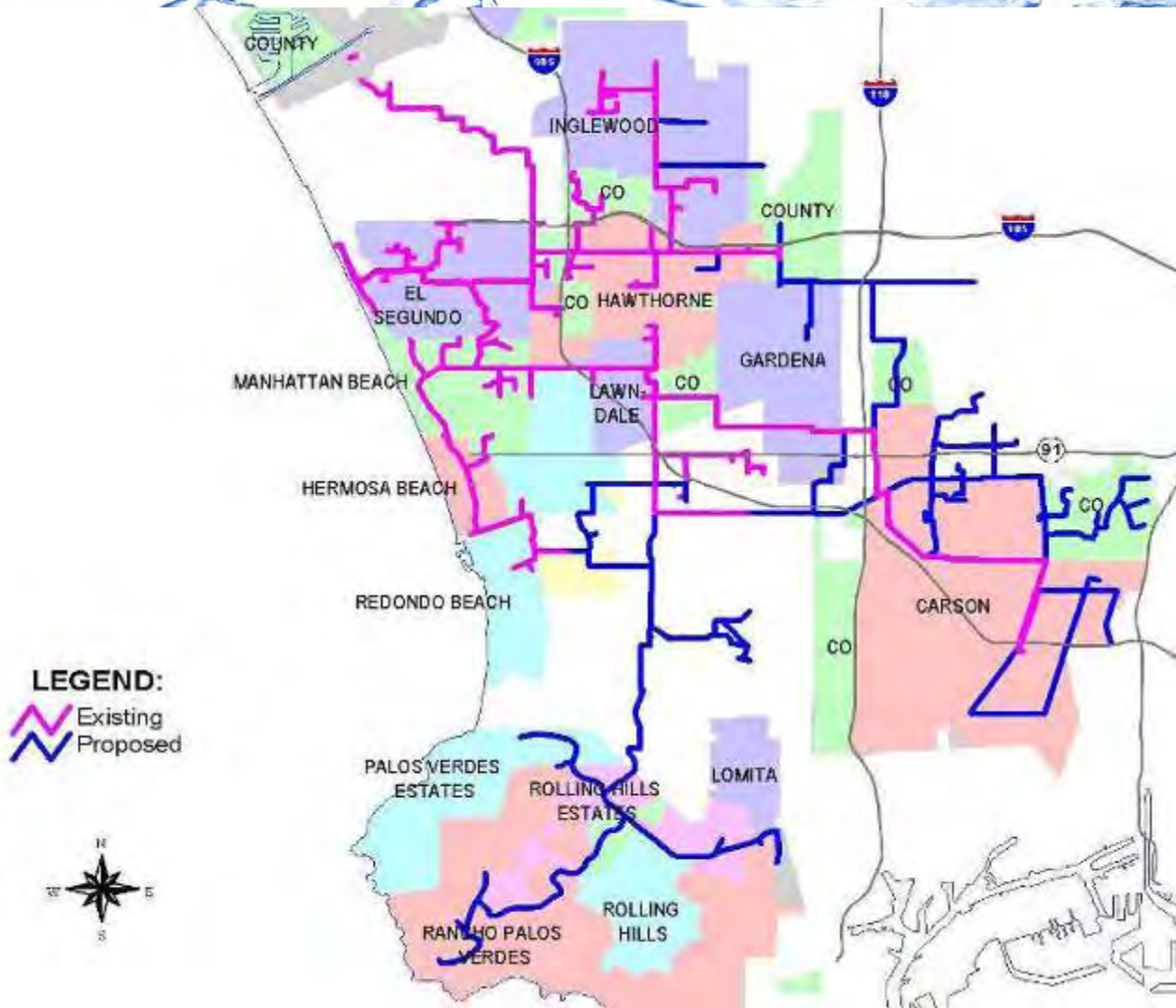
- **Go from 30,000 acre feet a year to 70,000 AFY**
 - Keep 5 tons biosolids from ocean daily
- **Produced 100 Billion gallons!**
- **Make 5 types of “designer” water**
 - 3 Ultra pure waters
 - One of which recharges local groundwater basins
 - One better than distilled water you buy in grocery store
 - We use same technology as Aquafina, Desante, Sparkletts, etc.
- **We can make near distilled quality water from sewer water in 20 min.**
- **Peak 10% energy use is solar!**

Water Recycling



- This would be your body if you only drank our ultra pure “designer” purified waters

Purple Pipe Irrigation Water System



- Pipeline 70 going to 130 miles

- 300 sites
Toyota, Home Depot Center, Goodyear, Honda, etc.



Reliability 2020

Maximizing Conservation

- **Doubling our efforts with industry, government and public**
- **Partnering & grants get \$6 worth of programs every \$1 invested**
- **With public -- focusing on outside - - time to re-landscape “California Friendly” – protects ocean!**
- **Asking for 20 gallons per person a day**

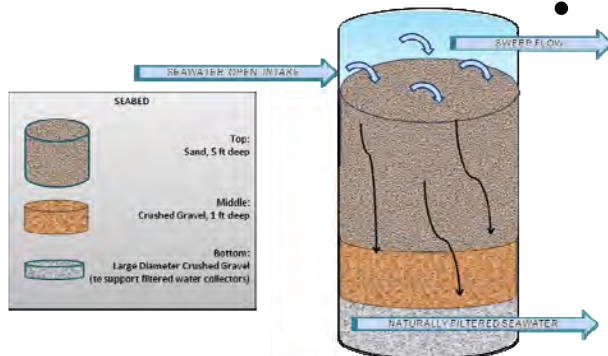
Doing "Responsible" Desal?



Wedge Wire Screen



Brine Aquarium



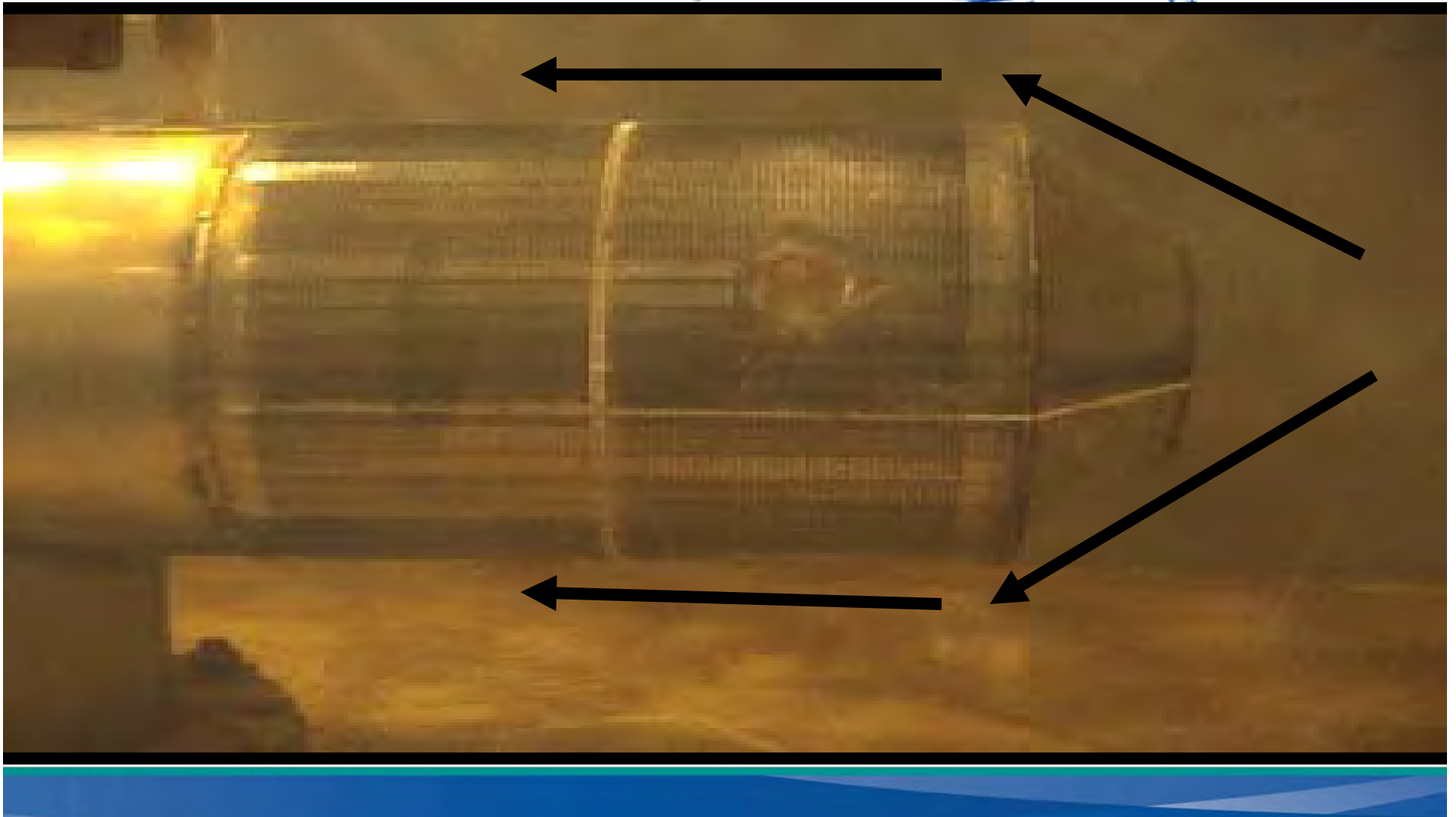
Sub-ocean Floor

- What is "responsible" desal?
- Mix of water sources: groundwater clean up, conservation, recycling and ocean desal
- Minimal take from ocean: Only 10% of our future water supply – 20 MGD
- Testing best ways to take and return water to ocean
- By the way, 75% of neighbors want desal
- **2010 Redondo Beach Demonstration Project**
 - **Test wedge wire screen**
 - **Sub-ocean floor withdrawal**
 - **Brine dilution with aquarium filled with ocean life**

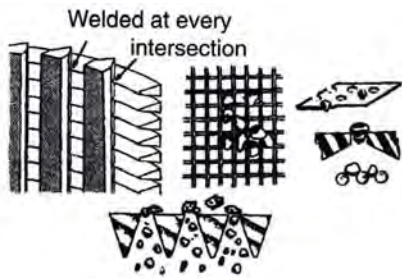
Water Education Center



Wedge Wire Screen Footage from Alden Research Labs Mass.



More "Responsible" Desal



- Desal uses 20% more energy than importing water & committed to use "green" energy to be carbon neutral
 - Low energy membranes, energy recovery systems, high efficiency pumps, & renewable energy
- Getting help from several ocean experts
- Capitalizing on prior ocean studies
- **Will protect 100% of adult & juvenile fish**
With 1 mm wedge wire screen only lose 15% larvae according to Dr. Mayer, Ph.D. in Fisheries and Quantitative Sciences from the University of Washington
 - 99.9% larvae die of predation or starvation because there are so many
 - Gobies fish, most impacted larvae, have actually increased in population due to more restored habitat

Strong Public & Environmental Support for Desal



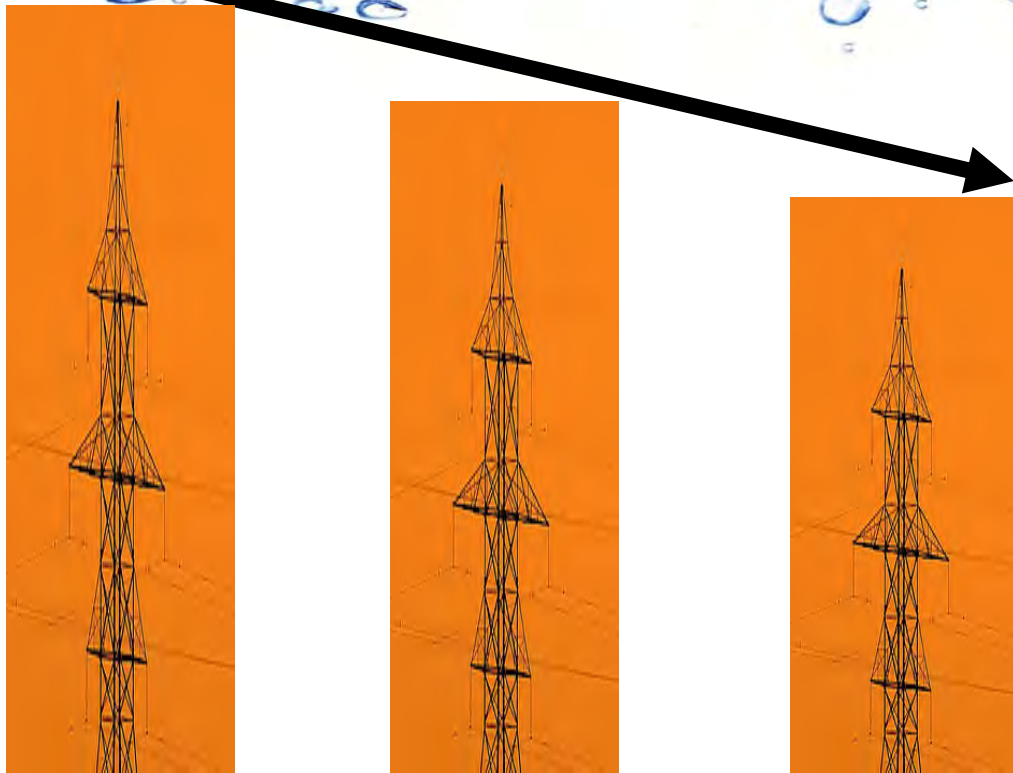
- 2009 April Survey – Self-proclaimed environmentalists are supportive of ocean Desal
 - 77% of local environmentalists favored WR 2020
 - 78% of local environmentalists favored ocean desal
- 2008 August Survey Environmentalist who donate to environmental groups are supportive of ocean Desal
 - 82% of people in LA area who donate to environmental groups support ocean water desal
 - 68.5% of coastal citizens support desal
 - 83% of citizens within West Basin’s service area support ocean water desalination





Water Reliability 2020

Energy Use & Water Reliability



1990 Used
470,000
Megawatts

2007 Used
380,000
Megawatts

2020 Use
370,000
Megawatts

- **WR 2020 actually lowers overall energy use over importing water**
- **As go off imported, go on to less energy intensive water sources, even including desal**

Cost & Water Reliability



- Goal is to have Water Reliability 2020 cost same as paying for importing less reliable water

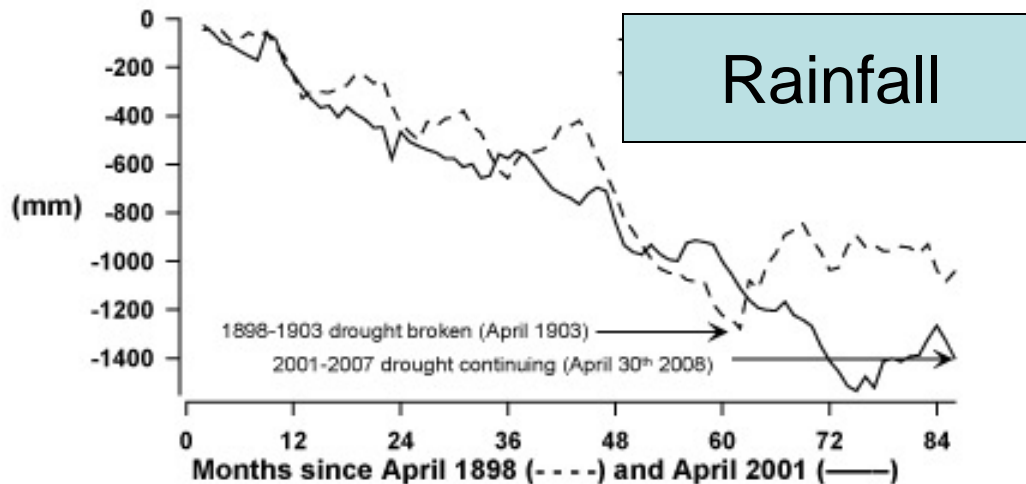


Water Supply Diversity

Economy



Accumulated Rainfall Deficit since April 1898 and April 2001



Rainfall

- **Need to diversify our water supplies like our financial portfolios**
- **Especially in Social**

WR 2020 Supporters!



- **WATER AGENCIES:** California Water Service, Municipal Water District of Orange County, City of Beverly Hills, Santa Clara Water District, City of Ventura, Water Replenishment District
- **BUSINESSES:** Body Glove & Dive 'N Surf, bp, Mirage Construction, Watson Land Company, Veolia Water North American, Parsons Engineering
- **CHAMBERS OF COMMERCE:** Carson, El Segundo, Gardena Valley, Harbor City/Harbor Gateway, Inglewood/Airport Area, LAX Coastal Area, Lomita, Manhattan Beach, Palo Verdes Peninsula, Redondo Beach, Regional Hispanic, South Bay Association of Chambers
- **COMMUNITY ORGANIZATIONS:** African American Episcopal Church, Christian Methodist Episcopal Church, Hawthorne President's Council, South Bay Workforce Investment Board, Gardena Lions, Palos Verdes Peninsula Lions, Redondo Beach Rotary, Inglewood Rotary, Palos Verdes Peninsula Rotary, West Torrance Lions, El Camino Lions, Rancho Palos Verdes Council of Home Owners Associations, IBEW, South Bay Association of Realtors, Southwest Membrane Operators Assoc., Omnilore.
- **2,500 local West Basin citizens!** Go to www.westbasin.org to see entire list.
- **CITIES:** Cities of Carson, Culver City, West Hollywood, Inglewood, Lomita, Manhattan Beach, & South Bay Cities Council of Governments
- **ELECTED OFFICIALS:** Senator Curren Price, Senator Rod Wright, Assemblyman Warren Furitani, Assemblyman Ted Lieu, Assemblyman Mike Davis, Mayor Jim Dear Carson, Mayor Mike Gin, Redondo Beach, Councilwoman and Former Mayor Margaret Estrada, Lomita, Councilman Steve Diels, Redondo Beach, Bill Brand, Redondo Beach, Steve Aspel Redondo Beach, Mathew Kilroy Redondo Beach, Mayor Andrew Weissman, Culver City, Former Mayor Roosevelt Dorn, Inglewood, Jeffrey Prang West Hollywood, Daniel Juarez Hawthorne.
- **OCEAN EXPERTS:** Dr. Burton Jones USC, Dr. Dave Caron, USC, Dr. Dave Mayer, University of Washington
- **ENVIRONMENTAL:** Friends of Gardena Willows Wetlands, The Sportfishing Conservancy, Volunteers and Organizations Improving the Community Environment
- **OTHERS:** Huell Howser TV personality, Dave Cunningham Former LA City Councilman, John Parsons Ex-Redondo Beach City Councilman, Harold Williams, Ex-Carson City Councilman, Bishop Henry Williamson, Bishop T. Larry Kirkland,

Sign on to Support Please!



Water Reliability 2020 Program

The water reliability program will reduce our dependence on imported water from Northern California and the Colorado River from 66% to 33% by 2020—giving us more reliable, locally-controlled water supplies at a cost equal to importing more water, while using less energy.

I support West Basin's Water Reliability 2020 Program (please check all that apply):

- West Basin can list my name as a Water Reliability 2020 supported on the program website and other materials.
- I will attend regulatory meetings to voice my support of Water Reliability 2020
- Please add me to the electronic newsletter mailing list.
- I would like West Basin staff to make a Water Reliability 2020 presentation to my organization.

Comments/Suggestions: _____

Name: _____ E-mail: _____

Organization: _____

Address: _____

City, State, Zip: _____ Phone: _____

www.westbasin.org

- Sign letter or card of support
- Will not get on mailing list
- Helps us get grant funding, which reduces your costs
- Thank you!

The logo features a stylized blue water droplet with two curved lines below it, suggesting movement or waves.

Water **Reliability** 2020



Sponsored by West Basin Municipal Water District





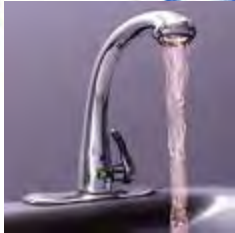
Environmental Check List for Desal?



Sponsored by West Basin Municipal Water District

- ✓ Public or Private- Private partnership
- ✓ Uses green energy to off set higher energy use than other sources of water
- ✓ Using all available other water sources
 - Maximizing conservation
 - Maximizing recycling
 - Groundwater cleanup
- ✓ History partnering with environmental groups
- ✓ Educates public/youth on environmental issues
- ✓ History of protecting ocean
- ✓ Replacement, not growth inducing water
- ✓ Science that shows compliance with 316B of Clean Water Act with regard safe water going back to ocean & intakes protective of ocean life
- ✓ **West Basin Does All of This!**

Story of Two Faucets



WR
2020



Imported
water

- One works all the time - reliable
- One gets water from local sources
- One has higher quality
- This one is controlled locally by your votes
- They cost about the same
- One is old with infrastructure problems
- One is not always capable of delivering water
- One depends on water from far, far away
- This one is outside your political control
- One has lower quality

Which one would you like to have for your business, family & future?

Residential Programs



1. **Green Garden Program**

- **Free landscape Surveys & free “smart” sprinkler controllers**

2. **Ocean Friendly Landscape Workshops**

- **Free native plant & water efficient landscape 3-hour classes**



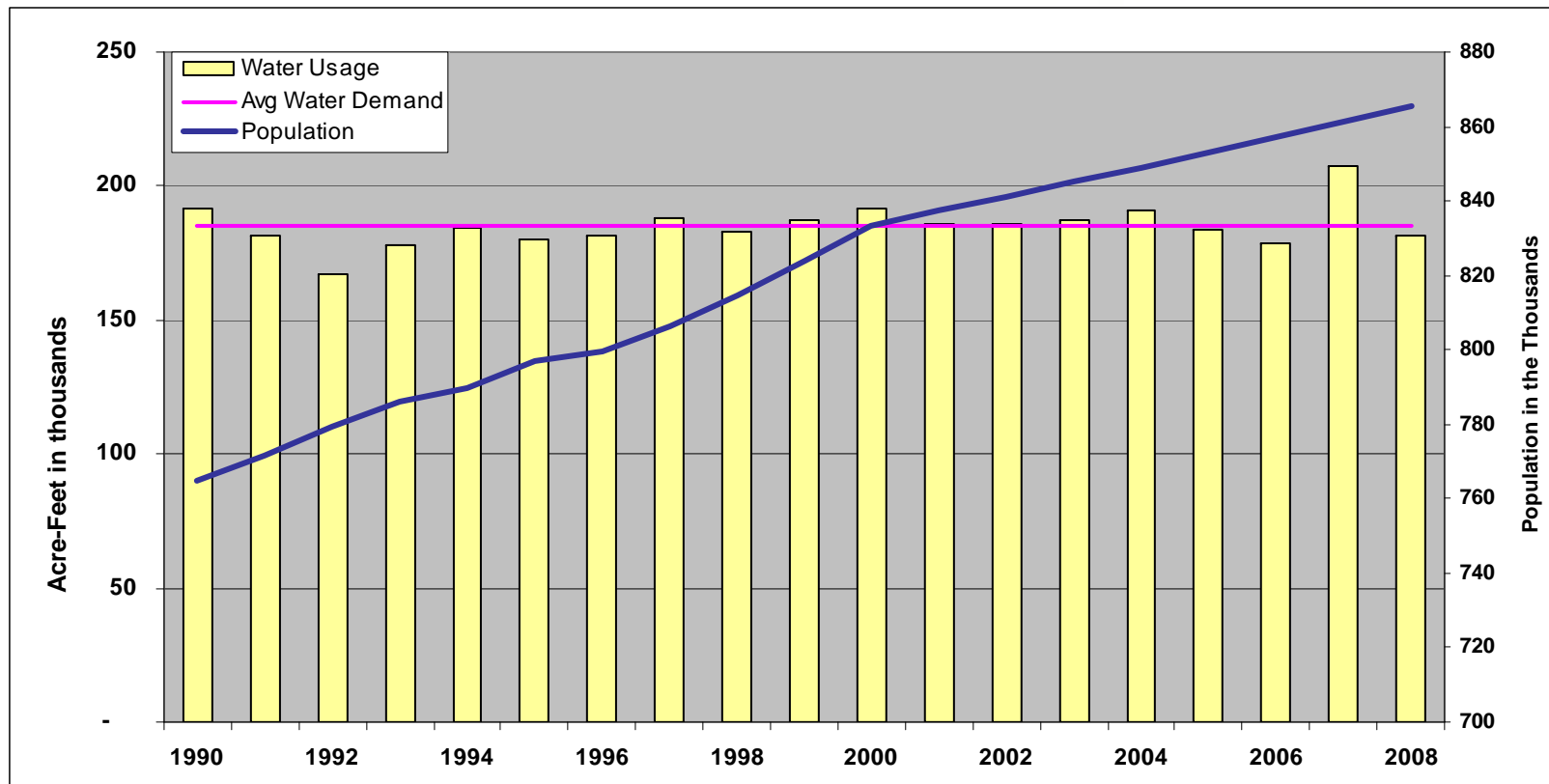
3. **Green Living for Apartments & Condos**

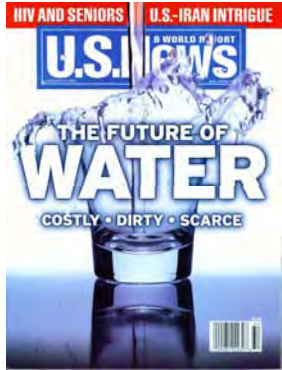
- **Free installation of high-efficiency toilets, and showerheads & compact fluorescent light bulbs**
- **Talk to owners**



Water Reliability 2020

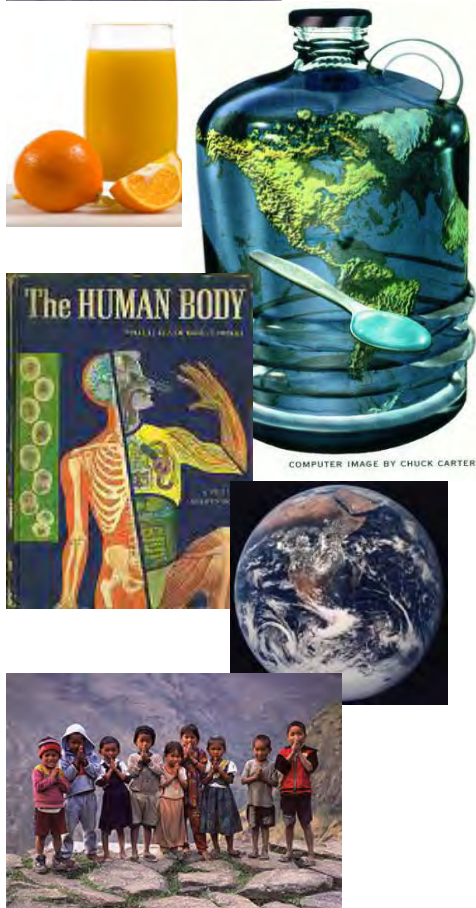
Recycling & Conservation Mitigated Population Increase Water Demands





Reliability 2020

Water Basics



- Everything is this room related water
- Body mostly water, brain 85%
- We waste more water brushing teeth than many people get to live on
- Most water is unusable/unreachable
- Same water on planet, all reused, no pure water
- Distribution problem 840,000 dams
- Looming global water crisis
- Water no longer western U.S. problem
- You live in theme park
- Two things astronauts can see from space?



Reliability 2020

Asking for 20 Gallon Per Day Per Person Reduction!

- 1. Turn off water when shaving or brushing your teeth – Saves 5 gallons per day.**
- 2. Install a low-flow showerhead and take a 5-minute shower – Saves 5 gallons per day.**
- 3. Use full loads in the washing machine and dishwasher – Saves 9 gallons per day.**
- 4. Install a 'smart' sprinkler system in your yard – Saves up to 47 gallons per day.**
- 5. Replace large turf areas with drought tolerant plants – Saves up to 60 gallons per day.**

**If everyone does a little,
we could save a lot! 45,000 gallons!**

West Basin Has History of Protecting Ocean



- Conservation & recycling programs already protect the ocean
 - Currently **focused on outside reducing runoff: Free Residential Surveys & Sprinkler Controllers**
 - Partner with Surfriders on Ocean Friendly Garden Classes
 - **Daily, keeping 30 million gallons of sewer water & 5 tons of biosolids from ocean**
- Youth programs focused on ocean protection – Roundhouse Aquarium & Sealab Splash Science